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CANADIAN GEOGRAPHICAL JOURNAL

Editor

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Gordon M. Dallyn

49 METCALFE STREET, OTTAWA

This magazine is dedicated to the interpretation, in authentic and popular form, with extensive illustrations, of geography in its widest sense, first of Canada, then of the rest of the British Commonwealth, and other parts of the world in which Canada has special interest.

Contents

MAY 1941

VOLUME XXII No. 5

COVER SUBJECT:—Evzones (well girdled). Elite soldiers of the crack regiments of the Greek Army. (See *The Glory that is Greece*.)

	PAGE
MEDITERRANEAN PILGRIMAGE — A STUDY OF ANCIENT SITES by Griffith Taylor	222
THE GLORY THAT IS GREECE by George Demetrios Vlassis	236
WILD GOOSE RENDEZVOUS by J. Dewey Soper	248
THE TEA INDUSTRY OF CEYLON by Alan Maurice Irwin	256
MEMORIES OF A SEVENTEENTH CENTURY SPY by J. S. Patrick	264
EDITOR'S NOTE-BOOK	IX

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The British standard of spelling is adopted substantially as used by the Dominion Government and taught in most Canadian schools, the precise authority being the Oxford Dictionary as edited in 1936.

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Fig. 1.—Map of the eastern Mediterranean Sea, showing places mentioned in the article. Annual rainfall is indicated.

MEDITERRANEAN PILGRIMAGE

A STUDY OF ANCIENT SITES

by GRIFFITH TAYLOR

IN the summer of 1938 the writer spent nearly four months in Europe and Africa visiting regions of outstanding importance in the development of European civilization. Various articles have appeared in the *Canadian Geographical Journal* and in the *Geographical Review* (New York) dealing with the writer's observations on modern conditions in the Balkans, Italy and the Alps, and Algeria. But one of his major interests was to see something of the earliest settlements in Europe, those dating back to the Stone Ages and the early Metal Ages. This article, therefore, is concerned with pre-historic and early historic sites in the central and eastern Mediterranean (Fig. 1).

I shall follow a historic rather than a geographic sequence in my article. Actually I saw the Roman city of Timgad before the early monuments in Malta or the Mykenean sites in Greece. But the reader will find the subject develop more naturally if we consider the Malta monuments first, and then those of Egypt, Argolis and west Greece. Athens and Africa come last in the historical sequence.

I. — MALTA IN THE STONE AGES

Malta is much to the fore nowadays owing to its key position in the centre of

(Photo 1)

The harbour of Valetta with two large British warships, the *Hood* and *Repulse*

All photos (except No. 6) by author

the Mediterranean area. The oval rocky island is relatively flat, and about eighteen miles long from north-west to south-east. Rather narrow valleys have been carved out of the soft limestone round its margins. The splendid harbour of Valetta is due to the drowning of two such adjacent valleys by the sea (Photo 1). Some of the largest British and Italian warships were at anchor here during our visit.

The island is divided into tiny fields by walls of rough limestone, and many crops are obtained as the result of the winter rains. In summer, however, there is hardly a vestige of green visible, since there are no hedges or forests to break the monotony of the landscape. In some districts the rocky expanses carry a few bushes and many herbs. The limestone is rather porous, and there are fairly numerous springs, but surface water is almost absent. Such then is the setting to-day



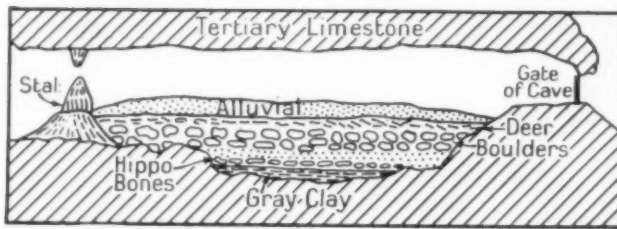


Fig. 2:—A sketch vertical section through part of the cave of Gar Dalam. The fossil bones prove a late land-bridge between Malta, Africa and Europe.

In prehistoric times we may imagine the rich shallow soils supporting copses of trees in the ravines, while a luxuriant herbage covered most of the island, which was, no doubt, of much greater extent in those times. Let us first visit one of the most interesting caves in Europe. About eight miles south of Valetta is a deep rocky gully in which is the entrance to the Gar Dalam Cave. There is a special Museum built nearby to house the relics from this cave and the vicinity. The entrance is shown in Photo 2.

Gar Dalam runs some 300 feet into the hill, and is clearly a solution channel such as is common in limestone districts (Fig. 2). The cave varies in height, but about twenty feet of debris is present on much of the floor, while the roof is eight feet higher. The very early history of Malta can be deduced from the fossils in the cave-deposits. One of the lower layers is about three feet thick, and consists largely of fragments from the skeletons of elephants and dwarf hippopotami. These herbivorous animals need fairly luxuriant vegetation over large areas for their support. Moreover, they clearly reached Malta by *land* from the south. Hence this evidence shows that, not long ago in geological time, Malta was united to Africa, while the climate must have been much wetter than now. At a much higher level are many fragments of bones from European deer, which prove the presence of land-links with Europe at this

date. Finally, embedded in the latest limy deposits some human teeth were discovered, which show that Neanderthal man lived in the cave perhaps 10,000 years ago. Nowhere in Europe is there more complete evidence of great changes in topography and climate during the Recent geological period than in this Maltese cave of Gar Dalam.

Let us now journey five miles to the west along dusty roads bounded by walls of grey limestone. We reach the barren rocky slopes of Mnajdra, where each tiny patch of arable land is marked out by rubble walls. Here are several monuments dating from the Later Stone Ages. Hagiar Kim is illustrated in Photo 3. The name refers to the "Standing Stones" which were all that projected from a mound in 1839. The site was excavated, and revealed a number of oval courts, each about forty feet long and connected by walled corridors. There are numerous altars and tall corner-stones, which show that the place was of religious significance. Some of these limestone slabs are over twenty feet long (Photo 3).

(Photo 2)

Bottom left:—Entrance to the cave of Gar Dalam, Malta. This contains fossil hippopotami, deer, and Neanderthal man.

(Photo 3)

Below:—"Standing Stones" (menhirs) at Hagiar Kim, Malta. They form part of a temple of the Stone Age.

223



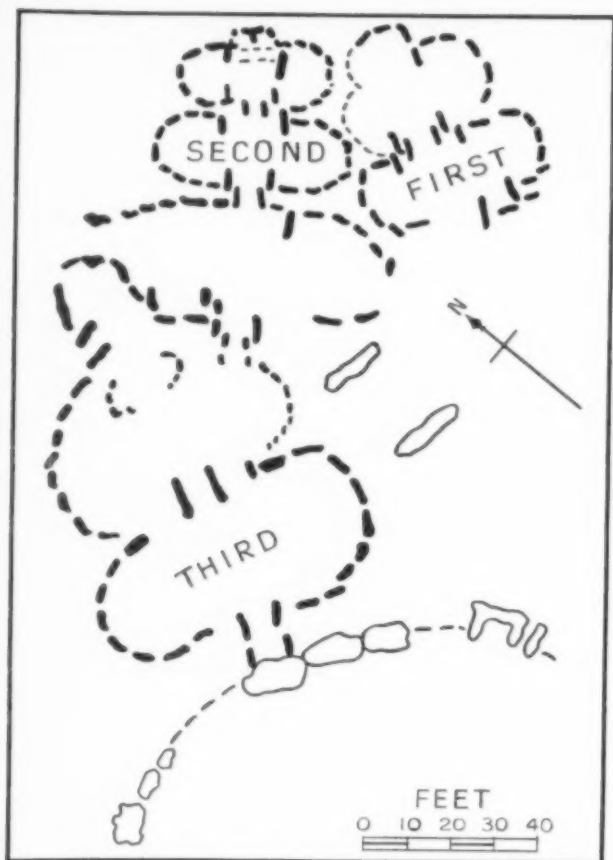


Fig. 3:—Plan of the three temples at Tarshien, Malta (after Zammit)

The finest site is at Tarshien, which is right in the southern suburbs of Valetta. It was unknown until 1914, when a farmer reported many flat stones in his field. Temples belonging to three different ages, but all preceding the Bronze Age, have now been excavated. The general plan of all these Stone Age temples is suggested by that of Tarshien in Fig. 3. To-day they appear as open courts with roofless corridors. But, when in use, many of the smaller rooms and the corridors were probably roofed with slabs. Along the sides are cupboard-like structures made of stone. Carvings on the slabs include spirals and bulls. Huge bowls, probably used for olive oil, are still to be seen; while, in some courts, hollowed stones to collect blood were in use. The elaborate character of these numerous temples gives us some idea of the complexity of life in the Mediterranean at that remote period, perhaps as far back as 5000 B.C. (Photos 4 and 5).

II.—EGYPT IN THE EARLY METAL AGE

In Malta we have seen relics of a rather primitive stage of man in the late Stone Age. Let us now turn to Egypt and study for a short time the environment of the region which contains the pyramids. These are the greatest monuments built by man, and it is salutary to our pride to remember that the pyramid of Khufu dates back to 2,800 years before the time of Christ.

Some years ago I made a trip of about a hundred miles across the Egyptian Desert from Suez to Gizeh (Fig. 4), and Canadians may like to read a brief account of this corner of the Sahara. As most folk know, a great belt of desert extends from the Atlantic near Cape Verde across Asia to the western Himalayas. No steady rain-producing agents ever traverse this enormous distance of 5,000 miles. Only two narrow belts contain rivers, and it is precisely here that the earliest city-cultures developed, in Mesopotamia and Egypt. Along the lower Nile a very complex civilization marked the Bronze Age, but we must confine our attention to the famous monuments near Gizeh.

(Photo 4)

Top:—Part of a court in the Stone Age Temple of Tarshien, near Valetta, Malta. The blocks are six feet high and ornamented by spirals and bulls.

(Photo 5)

Left:—Court and fireplace in a temple at Tarshien, Malta

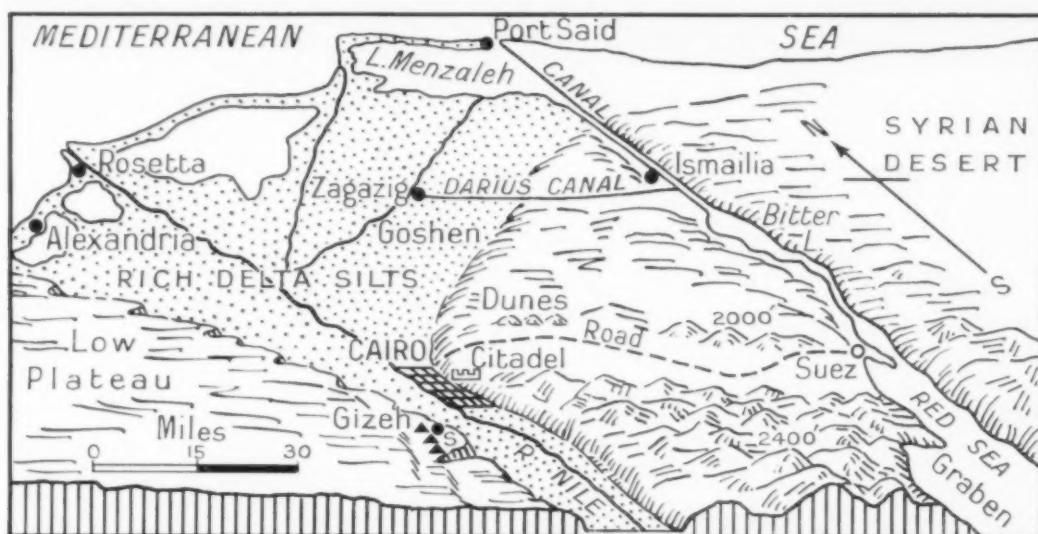


Fig. 4.—Sketch of the Nile Delta and Suez Canal. Note the position of the pyramids at Gizeh on the west side of the Nile graben. The position of the early canal of 500 B.C. is shown. S denotes the Sphinx.

The sketch diagram (Fig. 4) shows the main features of the environment in lower Egypt. The Suez Canal leading to the Red Sea is depicted on the right, and the great delta of river-silt brought down by the Nile occupies the left half of the sketch. It is worth noting that the two 'prongs' at the north end of the Red Sea are due to two depressed blocks of the crust (or *graben*) which have been drowned by the sea. The Suez graben is illustrated in the sketch. So also the fertile Nile Valley from Aswan north to Cairo is another long narrow graben about ten miles wide. This valley with its rich flood-silts is bordered by cliffs of Tertiary limestone several hundred feet high. The wide valley is due to subsidence of the crust, though the river itself has cut out the narrow canyon south of Aswan.

As we left the narrow rambling streets of Suez on our journey to Cairo, we passed a small group of date palms to the south. A mile away to the south was a range of hills, while to the north the country was undulating loam with low stony ridges. The absence of sand was most noticeable. Clumps of thorny or fleshy plants were growing at one yard intervals in all the lower parts of the valleys. I noticed only a few trees in the whole distance, and they were about twenty feet high with thorny leaves. About fifteen miles from Suez the typical desert formation or *Serir* became common. Here the loam was closely

covered with small stones, which are the last remains of formations whose softer material has been blown to leeward. Some fifteen miles from Cairo we saw a few high dunes to the north-west (Fig. 4). These were large horse-shoe *Barchans* of moving sand, but they are relatively rare in the Sahara, and, indeed, only cover about one-eighth of that enormous expanse. The *Serir* or "Desert Armour" is the commonest formation in the Great Desert.

Cairo is built on the east bank of the Nile just at the apex of the great delta. Here the Mokattam Hills (of Eocene age) rise steeply above the river flat. This is only two miles wide on the eastern side, though the flood plain is seven miles wide on the other bank. The ancient Citadel of Saladin crowns the foothills below the Mokattam. Across the bridge to the south-west is Gizeh, which occupies the rich flats in the western part of the graben mentioned above. On a step above the cultivated fields is the Great Pyramid of Khufu, which towers 481 feet above the loamy rubble at its base. Alongside is the smaller pyramid of Khephre (447 feet), in

(Photo 6)

The Great Pyramid of Khufu (481 feet) on the right, and the smaller pyramid of Khephre (with original capping) on the left. Between is the Sphinx, carved of Eocene limestone (66 feet high).



which some of the stone casing is still preserved, and can be seen in Photo 6. The pyramid of Menkewre is still smaller and lies farther to the south.

The visitor is prepared for the huge size of the pyramids, but not for the irregular character of the surface. The original casing of faced stone has been removed and used by the various builders of Cairo, and the huge 'steps' on the surface show the original blocks, each weighing two and a half tons of which the pyramid was built. Some 100,000 workers were employed (during the 'off' season of the inundation of the fields) for over twenty years in the construction of the monument. We are told that each ruler planned an average-sized tomb, and if he had a long and prosperous reign he added outer layers to his monument. Hence Khufu was evidently blessed with a reign of major proportions. It is a matter of twenty minutes hard scrambling to reach the summit, and most folk are pushed and pulled up the blocks by lusty Arabs.

As one rides on camel-back past the pyramid and turns down toward the Nile a rounded mound appears like a gigantic Arab oven. A nearer view shows that this is the back of the head of the Sphinx (Photo 6). Possibly the builders of the Great Pyramid noted that a natural rocky knob of Eocene limestone nearby resembled a head, and they carved it into a representation of Khufu. Then excavating all round and below the knob, they cut out the body of a lion (with extended paws) facing the East. The whole structure is sixty-six feet high, but, being below the general level of the sand, a good deal of the body is generally covered with drift sand.

We left Cairo by train for Ismailia and Port Said (Fig. 4) about 11 a.m. For several hours we passed the wonderfully fertile land which at the time of the Jewish exile was called the 'Land of Goshen'. The whole delta consists of flat paddocks of black mud, some of which were still under water from the Nile. These paddocks were divided by wide canals, and again subdivided by narrow ditches into smaller fields. Sugar-cane, maize and cabbages were the chief crops in December. Small groups of date palms surrounded blocks of dark brown mud, which on nearer approach became flat-roofed huts. Water-buffalo were busy ploughing, and flocks of sheep and goats wandered through

the stubbles. Here and there stately camels carried huge bundles of maize or millet stalks. Women marched along the tracks with large baskets perched on their heads, and long-robed Arabs passed astride diminutive donkeys. Across the fields, the narrow peaked sails of the dahabiehs rose above the levees along the canals.

Between Zagazig and Ismailia we traversed a tongue of fertile land between desert hills. This is called the Wadi of Toumilat; and few people know that as early as 500 B.C. Darius the Persian ruler had built a canal, which connected the Nile with the Red Sea, along this valley (Fig. 4). There was much traffic in ancient times along this canal, and even as late as the zenith of the Roman Empire under Trajan. It was neglected and silted up after the conquest by the Arabs in the seventh century. The modern canal along the course of various salt lakes does not approach the Nile. It was finished by the French engineer De Lesseps in 1869.

III. — GREECE IN THE LATE BRONZE AGE

Perhaps no period in European history is more remarkable than the centuries around B.C. 400, when there flourished what is known as the "Golden Age" of Greece. It was the time of Plato, Aristophanes and Phidias, to name three of the most famous of human educators. From what did this remarkable culture spring? To answer this question we must go back a thousand years to the so-called Mykenean Period, which flourished around B.C. 1400. This was about the time when the northern 'true' Greek tribes were beginning to migrate into Greece, and recent research seems to show that the later Mykenean culture owed a great deal to the arts and crafts of the incoming Greeks.

The Mykenean people were merchant seamen of the dark Mediterranean race who traded all round the Aegean Sea. Their earlier settlements were in Crete, but they soon founded cities to the north, such as Mykenae and Tiryns in Greece, Troy near the Dardanelles, and perhaps others in Etruria in northern Italy (see Fig. 1).

Late one evening in June 1938, I descended from the train at Phictia, which is a tiny station about two miles west of Mykenae. It was an eerie walk in the dark up the hills to the village near the ruins; the more so since my knowledge of

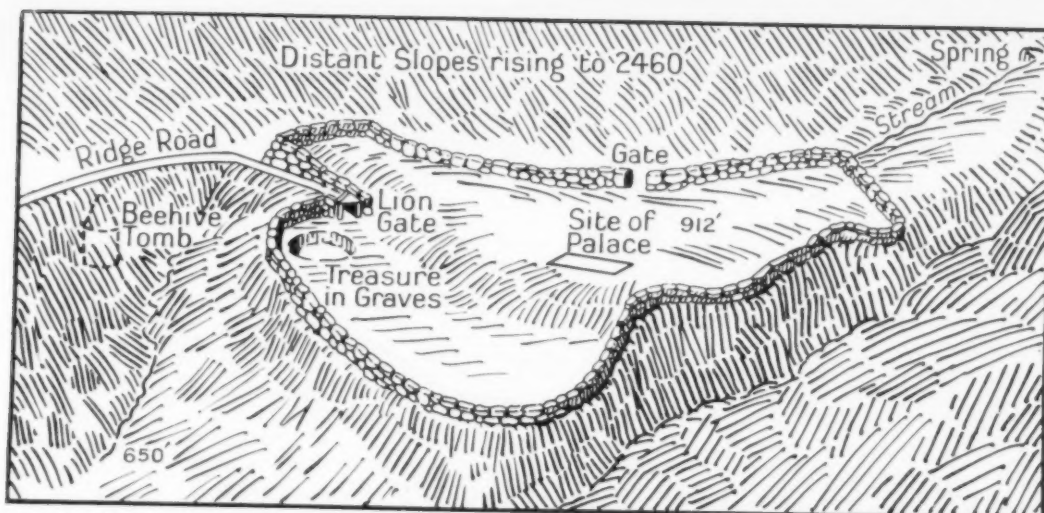


Fig. 5:—Sketch of the upper city (Acropolis) of Mykenae, looking north. It is 1,000 feet from west to east.

Greek was confined to about a dozen words. However, I made out some folk sitting round a fire, and a small boy guided me to a clean if simple inn. Next morning I set out for the famous hill-fortress, which lies on a knob in the pass between two mountains. These are about 2,400 feet high, while the fortress is about 900 feet above the sea. In summer Greece is very hot, dry and bare. Limestone crags and heathy slopes are characteristic of Argolis, and boulders cover the ground, with much blue thyme growing between them. There were a few shepherds about, and patches of stubble showed where grain had been harvested (Fig. 1).

The road runs along a narrow ridge as it approaches the famous Lion Gate. This is mainly formed of three giant slabs of limestone. The door-posts are ten feet high, while the lintel is sixteen feet long and three feet thick (Photo 7). A triangular slab of brown limestone above the door has been carved to represent two lions with a pillar between. Probably the heads were made of bronze, but these have vanished. This is undoubtedly one of the earliest large sculptures in Europe. The walls are well shown in my photograph, and though no cement was used, they have withstood man and weather for over 3,000 years. Passing into the Acropolis by a short corridor (Fig. 5), I followed the north wall and emerged by the North Gate. Near here is a subterranean stairway leading to a well (Photo 8). The

(Photo 7)

Top:—The famous Lion Gate at the entrance to the upper city of Mykenae. View from the outside showing the cyclopean walls.

(Photo 8)

Right:—Entrance to the tunnel and stairway leading to the well in the Citadel of Mykenae.



walls of the passage were made of the same uncemented cyclopean blocks. At the east end of the fort is a fairly sharp ridge of limestone, and nearby was a delightful spring hidden under thick bushes. This was one of the few springs I found in my Mediterranean wanderings, and was correspondingly welcome. Its waters supplied the reservoir in the Mykenean City.

Turning back over the grassy plateau inside the fortress, one passes many remains of prehistoric rooms. Some very rough stone jars are still extant, but little is left of the Palace but the outline of the rooms. The most interesting features are the Treasure Tombs just south of the Lion Gate. There is a double enclosure wall of thin slabs about six feet high (Photo 9). This enclosure is about thirty yards across and surrounds five circular pits about fifteen feet deep. Within these pits, Schliemann, in 1877, found the skeletons of seventeen persons. Buried with them was an enormous collection of gold and silver ornaments which are now in the Museum at Athens. Gold masks are common, while brooches, model animals, cups and weapons are also included in this marvellous find.

The lower town of Mykenae extended about half a mile to the south-west of the Acropolis, along the broad ridge traversed by the present road. Only fragments of the walls remain above ground, but the "Beehive Tombs" are the most perfect prehistoric monuments which the writer has seen. There are half a dozen near the Acropolis, and the size and shape of one of them is suggested in the hill slope just below the road in Fig. 5. The Tomb of Atreus is 1,500 feet south-west of the Lion Gate, and its imposing entrance is shown in Photo 10. Passing inside one finds that the tomb is about fifty feet high, and is circular in plan with a diameter of about forty feet. It is built up of about thirty horizontal courses of curved stones. The size and accuracy with which they fit together, and their state of preservation, are amazing. For instance, the door is seventeen feet high, and its inner lintel is a single stone said to weigh 113 tons. Yet this huge mass has been carved to the exact curve to fit the circular wall. Bronze nails have been used in ornamenting the tomb, and no finer monument of the Bronze Age is known in Europe. It may be dated about 1300 B.C.

From Mykenae I travelled south about twelve miles over the fertile plain of Argos

to a second Mykenean site (Fig. 1). Tiryns is not so impressive, for it is a brick-shaped ridge of limestone about fifty feet high and 1,000 feet long. It was perhaps originally an island. This rises from the coastal plain about three miles from the sea. The relics of the walls are more imposing than at Mykenae, for originally they were perhaps sixty feet high and twenty-six feet thick at the base. The entrance is by a ramp on the east side, along an imposing corridor of gigantic blocks of limestone (Photo 11). The top of the Acropolis is nearly level and quite bare, though one can still trace the outlines of the Palace and other buildings. The most interesting corner is the gallery at the south end. This is a passage thirty yards long and fifteen feet high which is included in the massive walls (Photo 12). There are six rough triangular windows at the side (built as usual without any knowledge of the arch) from which one can view the plain of Argos. For centuries sheep have used the gallery as a shelter, and their bodies have polished the lower portions of the limestone slabs in a very striking manner. Probably Tiryns is older than Mykenae, but both were destroyed about B.C. 460. Both of them are referred to in the songs of Homer, which date around B.C. 1000.

IV. — GREECE IN THE GOLDEN AGE

An age of widespread colonization preceded the Golden Age of Greece. The Phoenician Empire was reeling from the attacks of the Assyrians to the east. The Greek cities were flourishing and indulging widely in trade. Merchants set up trading stations all round the Mediterranean and Black Seas. Soon daughter colonies of Greece sprang up, from Massilia (Marseilles) in the west to Crimea in the north-east and Cyrene in the south-east. We have only time to refer to two of these colonies, both of which derived from Corinth. In the islands south of Italy many flourishing Greek towns arose, of which Syracuse in Sicily was perhaps the most important (Fig. 6b). At its zenith it contained half a million inhabitants, and its walls were fourteen miles long. The ancient city covered all the low plateau to the north of the present town of Syracuse, which is only one-tenth the size. Indeed, it is interesting to note that to-day the folk dwell mainly on or near the site of the

(Photo 9)
Right:— The Treasure Pits
in the Citadel at Mykenae.
The interior of the Lion
Gate appears in the back-
ground at the right.



(Photo 10)
Left:— The passage and
gateway leading to the
Tomb of Atreus — a
"Beehive Tomb" at My-
kenae. The doorway is
about ten feet high.



(Photo 11)
Above:— Cyclopean walls flanking the
entrance to the Citadel of Tiryns

(Photo 12)
Below:— Gallery within
the giant walls of the
Citadel at Tiryns



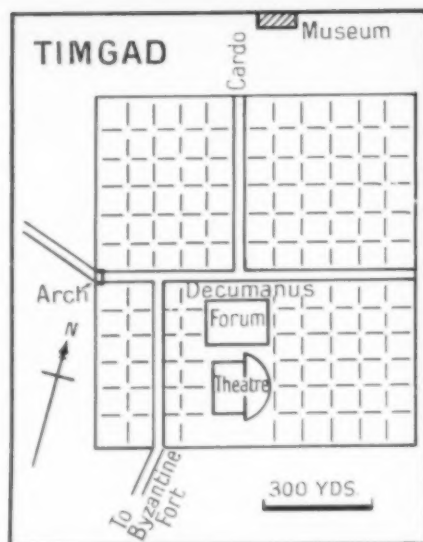


Fig. 6(a):—Plan of the Roman city of Timgad in south-east Algeria

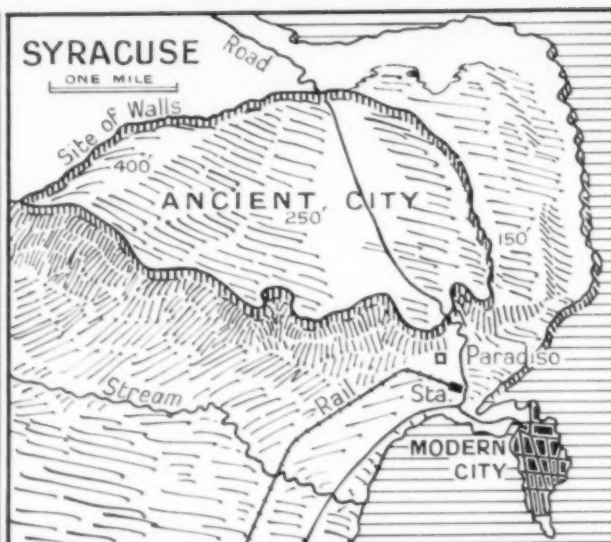


Fig. 6(b):—View of Syracuse (in Sicily), showing the contrast between the small modern city and the large ancient city, which also included the port.

earliest port, while the plateau is almost empty.

The town revolted against the Greeks around 412 B.C., while later in 213 B.C. there was a famous siege, when the military engines of Archimedes helped to save it from a strong Roman attack. Our photograph shows the prosperous orange and fig orchards which are growing in the giant excavations called Latomia. From these the early Syracusans obtained their building stone. In the cliff at the back is a narrow winding cave 200 feet long with a remarkable echo. It is called the 'Ear of Dionysius', and was credited with magical properties in classical times (Photo 13).

Off the north-west corner of Greece is the long narrow island of Corfu, which was colonized from Corinth about 700 B.C.

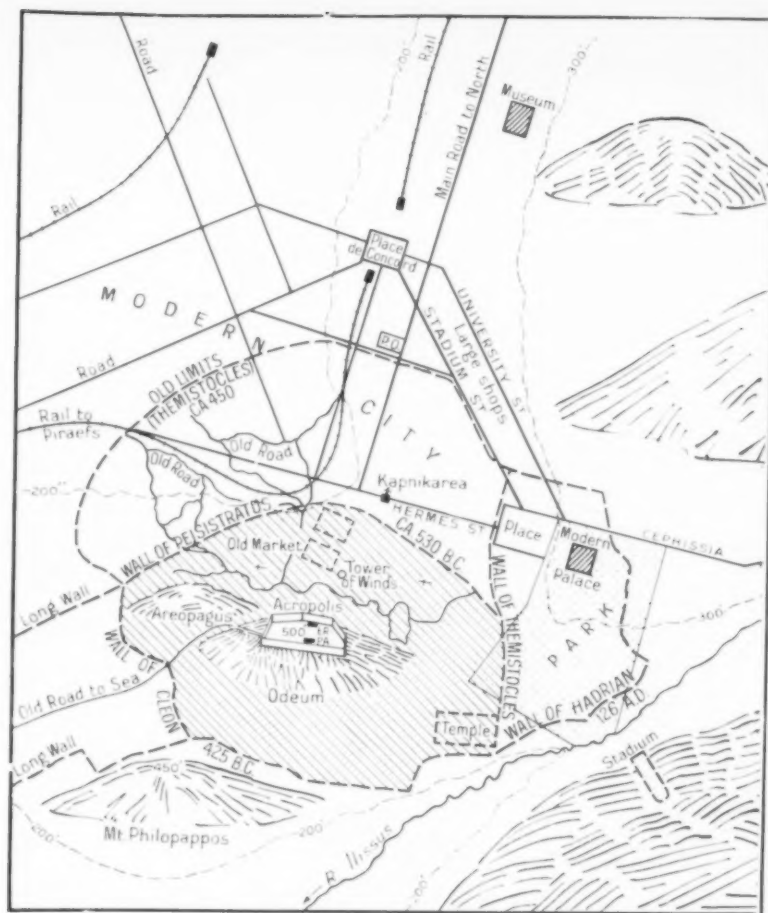
(Photo 13)
Bottom left:—The Paradiso Latomia (quarry) at Syracuse with the cave called the "Ear of Dionysius" which opens at the back of the excavation.

(Photo 14)
Bottom right:—The ancient circular Tomb of Menekrates at Corfu, dated about B. C. 550. The grave is about twelve feet across.

It is of interest that one of the earliest naval battles in Europe was fought between Corcyra (Corfu) and Corinth in 650 B.C. To-day it is a rather well-known tourist resort, and, since it is endowed with a better rainfall than most parts of the Mediterranean, the vegetation is more luxuriant than usual. It was held for many centuries by the Venetians, and the strong fort, cut off from the main island by a deep artificial canyon, is well worth a visit. But to the writer the most interesting spot was the Tomb of Menekrates which is one of the best preserved relics of its kind (Photo 14). The photograph shows its general shape very well. It is to be found in the garden of a house near the shore about half a mile to the south-west of the fort. An inscription can be deciphered on the stones beneath the projecting rim of the tomb, which gives us the name of the citizen buried here, and tell us that he died by drowning. From the character of the script it is possible to date it as about 550 B.C. I have copied the name 'Menekrates', as it appears (written from



Fig. 7:—Bird's-eye view of the site of ancient Athens, showing its relation to the hills and River Ilissus. The Acropolis was in the centre of the oldest town. The new main streets of the modern city lie to the north-east of the Acropolis. It is just half a mile from the Tower of the Winds to the Palace. Scale 2000 feet = 1 inch.



right to left) on the tomb, in my map (see Corfu on Fig. 1).

No city is of more importance in a study of the development of European civilization than Athens. It lies about six miles from the sea on a plain about four miles wide, watered by the Cephissus. This stream receives the Ilissus from the east, and the two are separated by the most striking of the Athenian hills, that of Lycabettus (900 feet). To-day, in summer, the Ilissus is a dismal tiny stream about three inches deep and jet black in colour, but no doubt after the winter rains, it is more attractive (Photo 15). In the south-west is the hill named after the last 'king' of Athens, Philopappos, and nearby are the low Observatory Hill and the Areopagus, where Saint Paul preached. All round this corner of Athens are innumerable ruins of houses, but the modern city has spread to the north-west away from the Ilissus.

The most interesting hill is the Acropolis which rises abruptly about 330 feet

above the plain. It was originally a hill-fort very like those which we have studied at Mykenae and Tiryns. It is about one-quarter of a mile long and is surrounded by low walls. There are still several wonderful temples on the Acropolis, which have been restored in large part. The

(Photo 15)

The nearly dry stream of the Ilissus at the height of summer in Athens





(Photo 16)

The Tower of the Winds in Athens. Figures representing the eight winds are carved on the walls.



(Photo 17)

Porch of the Erechtheion on the Acropolis of Athens, dated about B. C. 435

map (Fig. 7) shows that the earliest walled city, going back to the times of Peisistratus, was of oval shape and surrounded the Acropolis on all sides*. After the great Persian invasions around 500 B.C. the city was nearly destroyed. It was rebuilt with great splendour in the time of Themistocles (about 450 B.C.), and now included a much larger area of the large plain to the north of the Acropolis (Fig. 7). The marketplace was in the centre of this city. Enormous walls were built to connect Athens to its port of Piraeus (pronounced Piréfs), and these also are indicated in the sketch. Greece was conquered by Rome in B.C. 146, but many of the Roman Emperors visited Athens, and Hadrian greatly beautified it. He added some of the walls in the south-east of the old city.

Until about 1830 Athens was only a small town like many others in the former Turkish territory. But after the War of Independence a city-planning programme was undertaken on a larger scale. The German Schaubert laid out much of the modern city, which reminds one somewhat of the plan of the north-west of Paris. There are two main squares or 'Places', one near the Palace, and the other in the north near the main railway stations. Streets radiate from the latter in four directions. The quite fine department stores, etc. are mostly to be found along the two wide streets leading from one

'Place' to the other. Here also is the University, while the Museum is rather away from the centre of the town in the north. In summer the most pleasant place to visit is the large park surrounding the Palace. Here only in Greece did I see anything approaching dense tree growth, and this is due to the constant irrigation of the gardens. It is very interesting to note the contrast between the modern shops on Stadium Street and the primitive little booths along the street of Hephaestus in the "Old Town" which extends just to the north-west of the Acropolis (Fig. 7).

To the scientist probably the Tower of the Winds will be as interesting as anything in Athens (Photo 16). It is surrounded by a small garden, and is forty-two feet high. In outline it is octagonal, and on each face is a fresco illustrating one of the main winds. Boreus is portrayed on one side, and Zephyr, the gentle west wind, on another; and so for the other directions. Inside are the remains of a water-clock, while various sun-dials once adorned the various walls. It was built by a Syrian philosopher in the last century before Christ, and is better preserved than almost any other monument.

The Acropolis is entered from the west by way of a winding road which brings us to the majestic steps and portals of the Propylaea. This monument was built about

*My colleague Professor Homer Thompson is working on the archaeology of Athens. He tells me that the popular names and dates assigned to the relics of the various walls (which I have used) will probably be altered in the near future.

B.C. 435. On the south side of the main portion of the Acropolis stands the Parthenon, which was erected about the same time. It is usually described as the most perfect monument of ancient art. The writer is no judge of classic architecture, and preferred the smaller Erechtheion (Photo 17). It is an Ionic temple which originally contained a famous statue of Athene. My photograph gives the reader a good idea of the beautiful portico on the south side of the temple. One could write pages describing the unique relics to be studied in Athens, but space is not available. It must be understood that the modern houses in the city of Athens extend far to the north of the area shown in the diagram. Indeed there are several new suburbs to the south, where now live the refugee Greeks who were repatriated after the Turkish wars in 1921-2.

V.—CARTHAGE AND TIMGAD IN NORTH AFRICA

In the last section of this article I want to interest the reader in two cities which were formerly of great importance in North Africa. One of the most prominent peninsulas on this north coast of Africa is that ending in Cape Bon (Fig. 1). Nearby smaller capes project into the Mediterranean with long gulfs between. The chief river of this coast is the Medjerda which drains the wheat districts of eastern Algeria and Tunis (Fig. 8). In the olden times this was Numidia, the granary of the Romans. But before their times the Phoenicians had placed a trading station on one of the

prominent capes and called it *Kart-hadsha*, i.e. the 'new town'. It commanded the mouth of the fertile Medjerda valley, and no doubt filled the same purpose as Bizerta does to-day, just a few miles to the north. Thus Carthage dates from B.C. 822, but its chief interest to us is due to its long rivalry with Rome, which ended with the destruction of the Carthaginian city in B.C. 146. Unfortunately there is very little to see to-day which dates back to these early times.

We boarded the tram in the modern French town of Tunis, and were rapidly carried along the artificial causeway which crosses the salt lagoon of Lake Tunis. This causeway is fringed with small tamarisk trees, and numerous cyclists were using part of its surface. We soon reached the little town of Goletta where there are many wharves. Here the tram turns north, and we are entering the hilly district which originally was covered with the city of Carthage, when it extended for several miles each side of Cape Carthage (Fig. 8). The tram-stop marked "Carthage" is now a modern French suburb with numerous examples of the usual two-storied white houses favoured by that nation. The most prominent building is the great Church of Saint Louis, which occupies the site of the Phoenician Citadel. It was raised as a memorial to the famous King of France who died here on his way to the last Crusade in 1270 A.D. (Photo 18).

We tramped over the undulating country to the west, and saw numerous relics of the Roman occupation in the early centuries of our era. As usual it is the subterranean waterworks or drains which persist longest, hence there are many re-

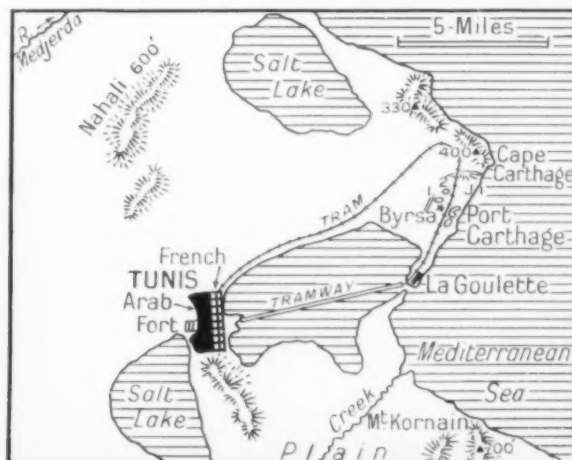
(Photo 18)

The site of ancient Carthage looking south toward Goletta (La Goulette). French bathing villas are now scattered among the Roman ruins.



Fig. 8.—Sketch map of the region between Carthage and Tunis showing the position of the Byrsa (Citadel) and ancient port of Carthage

233



mains of their aqueducts and cisterns. There is also a fairly well-preserved theatre, built of limestone blocks, and many mosaic pavements. Making our way back to the coast we could still observe, below sea-level, the heavy walls of the outer port of Carthage (see J in Fig. 8). Modern villas and refreshment places fringed the sandy bathing beach. But to the south one can identify the sites of the commercial harbour of ancient Carthage. To-day there are two rounded ponds, overhung with palms in places, but with no remains of masonry that I could see (Photo 19). They were about 100 yards across and differed not at all from innumerable salty pools all round the Mediterranean Sea to-day. One feels that the order of the Roman leader "Carthage must be destroyed" was very faithfully carried out.

Since this article is concerned with ancient monuments, I cannot dwell on the many interesting things to be seen in the Arab portion of the city of Tunis. The bazaars are unique, for the tortuous passages between the tiny shops are completely roofed. Only at intervals is there a circular hole in the plaster roof through which pours down the torrid heat of the African sun.

For our final survey we must move westward about 200 miles into the inland plateau of eastern Algeria. Here just beyond the basin of the Medjerda River (Fig. 8) are several Roman cities which have been less despoiled than most of the contemporary places in Europe. Their position as garrison towns on the desert border of the Roman "Granary" has left them somewhat free from many of the disturbances of more attractive regions (Fig. 1).

Timgad was built about the year A.D. 100 at the order of the Emperor Trajan, and was occupied by a legion of Parthian soldiers. It lies twenty-four miles to the east of the modern town of Batna. We drove there along a well-made road, which passed through undulating country just north of the Aures Mountains. All along the route were wheat crops in a very poor way. Often the plants were only about eight inches high, but were bearing grain.

Our driver said they had suffered bad seasons for the last ten years. We saw Arabs reaping with their tiny sickles, and in places the plants were so far apart they were gathering the grain by hand!

About eight miles from Batna we passed through the first Roman town, called Lambesi. Here a huge modern prison cuts right across the ruins of the old Roman settlement (Photo 20). There are still preserved several triumphal arches and a large building called the Pretorium. We did not linger here, however, but hurried on to Timgad. On the way we passed a motor lorry laden with large logs cut in the adjacent mountains. Nowhere in Algeria except near Constantine did I see any other large trees.

Timgad is situated in rather flat country just south of the hills. There is little settlement near nowadays, since the land seems to be farmed for wheat by various Arabs in the employ of a large French development company.

The plan of Timgad is that typical of a Roman garrison town, and remains unaltered since it was first built, since no later town has trespassed on its site (Fig. 6a). It is in the form of a square of about 350 yards on each side. The two chief streets are the *Cardo* running north and the *Decumanus Maximus* running west-east (Photo 21). The Forum is in the centre of the town with the large open theatre just to the south. Six large Thermes (Baths) are scattered close around the city, and there are relics of several of them in the city itself. The Arch of Trajan has been well restored, and forms the entrance on the west side (Photo 22). The cross streets cut the city up into about 100 equal squares, and give the site to-day very much the appearance of a gigantic chess board. All the walls are fairly well-preserved to a height of about three or four feet; but there are no roofs or any part of the buildings in most cases above this level.

About a quarter of a mile to the south is a Byzantine fort built by Justinian in the sixth century, A.D. It has thick

walls, and relics of the eight towers survive. In the north of Timgad is a small museum, where are collected innumerable relics found on the site. These include statues, ornaments, lamps, bronze utensils, and money. Just outside the museum is a simple fountain which flows strongly even in summer, and is probably the same source which supplied the Roman soldiers 1,800 years ago.

In conclusion let me remind my readers that a progressive Greco-Roman culture persisted in Eastern Europe for a thousand years after the fall of Rome. In Greece itself, but to a much greater extent in Constantinople (which was the capital of the Empire after 333 A.D.), civilization was preserved while pagan barbarians were ravaging Western Europe. This Byzantine Empire is of great significance in the eastern Mediterranean. My last photograph shows a good example of Byzantine architecture. It is the small church of Kapni-karèa dating back to the ninth century (Photo 23), which is to be found still in use in one of the streets of Athens just to the north of the Acropolis. Not until 1453 did the last links with the classical culture pass away in the East, when Constantinople was sacked by the Ottoman Turks.



(Photo 19)

One of the twin basins of the old port of Carthage, almost the only relic dating back to B. C. 146



(Photo 20)

The Pretorium at Lambesi in south-east Algeria, an ancient Roman building of about the second century A. D.



(Photo 21)

A view of one of the main streets in the ancient Roman garrison town of Timgad in south-east Algeria

Bottom right—(Photo 23)

The Kapni-karèa church dating back to the great Byzantine Empire of the ninth century A. D. It is still in use, and is to be found just north of the Acropolis in Athens.

Below—(Photo 22)

The Triumphal Arch of the Roman Emperor Trajan (about 100 A.D.) at Timgad in south-east Algeria





Architecture of a home on the Island of Hydra, Aegean Sea

THE GLORY THAT IS GREECE

by George Demetrios Vlassis*

*"The tide of years to come shall bring more
praise to these thy people."—Aeschylus*

THE splendid and, for the uninitiated, the unexpected way in which the Greeks responded to the unjust and insolent demands of Italy, whereby territory which was Greek from time immemorial was to be handed over, has evoked such an enthusiasm for Greece all over the civilized world that many have begun to take stock of their knowledge of that land and to revise their opinions and ideas concerning the modern Greeks.

Surely these modern Greeks who, in spite of the tremendous odds against them, decided to fight rather than submit to superior force, to die rather than live the lives of slaves, must have within themselves something of the blood and the spirit which animated the warriors of classical Greece and in recent years the liberators of Greece during the titanic struggle of 1821-1829.

Greece is reborn, they say. The old classical period is returning to Greece. Truly, Greece was never dead to be reborn. But the utter injustice of the Italian demands awoke within the Greeks a history of 3,000 years full of renowned accomplishments. Renowned because they were always victories of inner courage against superiority of force, victories of high ideals and purposes against the force of matter. Hence the miracle. This miracle, however, is found occurring repeatedly in the illustrious pages of Greek history. The Persians came to know of it in Marathon and on the waters of Salamis, the Arabs came to know of it when their black waves burst in bloody foam against the walls of Byzantium. Other enemies of Greece knew it. And the Greek miracle is happening again against the aggressors of to-day. It is happening again because of the unshakable faith of the Greek people in the destiny of their country and the inspiration they inherited from the highest examples of Hellenic history. It is happening again because of the deep and calm

conscience that they are fighting for the noblest ideals of man which found their birth in Greece, and which have always been the yeast for the rebirth of mankind.

* * *

The Poet Laureate of Greece, Kostas Palamas, in one of his poems exhorts the Greeks not to gloat over the glory of ancient Greece, but, winning new laurels, to demonstrate to the world that they are worthy descendants of glorious ancestors.

"Life is in front of you" he says, "back is death, it is marasmus."

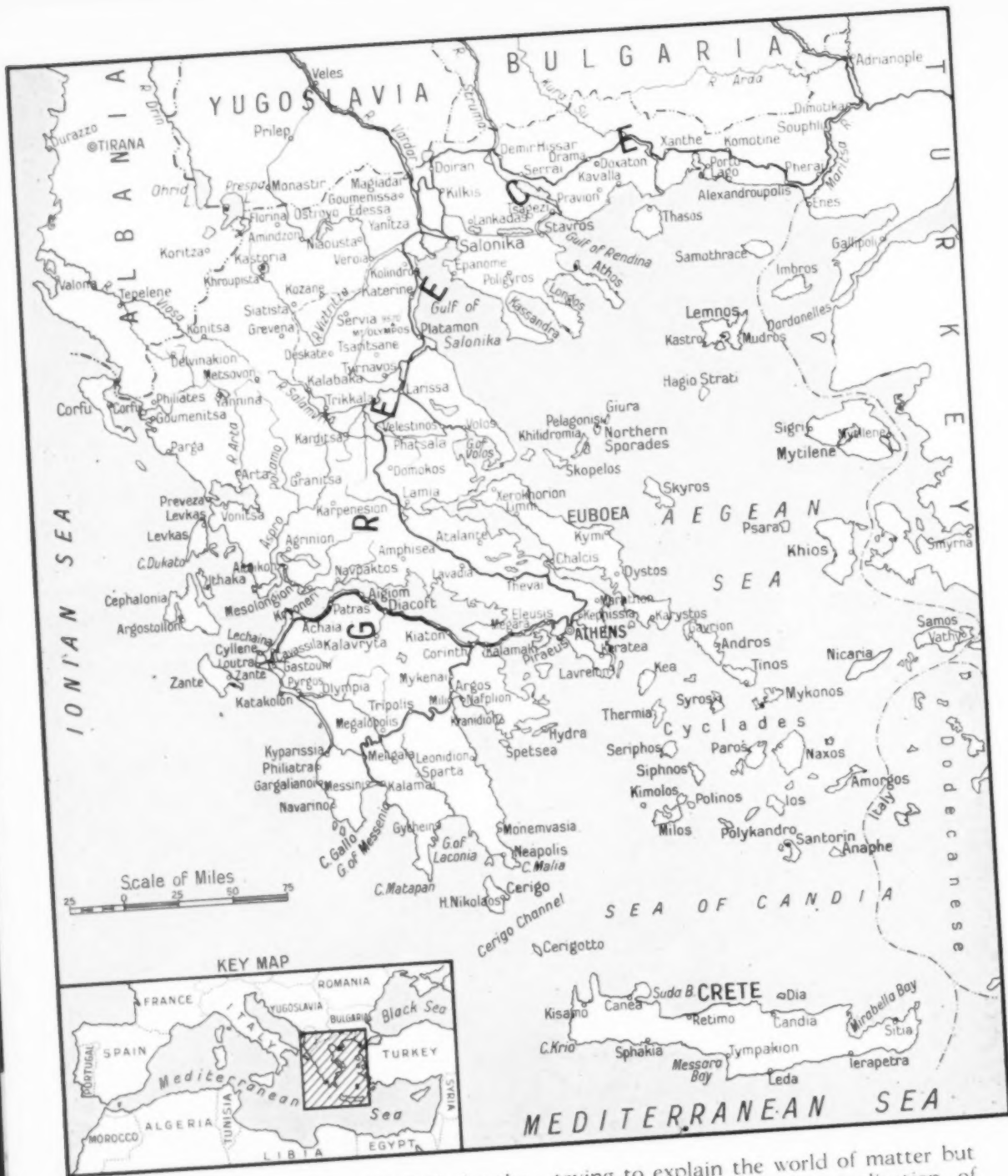
A glance, however, in the past is necessary if it is inspired by the desire and the energy to prove worthy of that past, and if it is to remind us of the debt we owe to it.

Civilization which we now enjoy is indeed a very complex thing, made up of many contributions, some large and some small from people in many lands and different ages. The foundations of our civilization have been laid by the Hebrews, the Greeks, the Romans, and the Christians. None, however, can equal the contribution of Greece in Philosophy, Literature and Art.

The Greeks were an imaginative, artistic, impulsive and idealistic people with few practical tendencies. They possessed, however, that inquiring spirit, the Socratic divine dissatisfaction which accepted nothing as granted, but which inquired into the source, or the first principle — the "Arche" from which all else had been derived. Of the early Greek philosophers, Thales (624-548 B.C.), the father of Greek science, had arrived at the conclusion that water was the original source of all matter. A few years later Anaximenes (588-524 B.C.) appeared who maintained that air was the first principle; Heraclitus (525-475 B.C.), said fire, and Pythagoras (580-500 B.C.), number.

*Royal Deputy Vice-Consul for Greece at Toronto

Photos supplied by Department of Press & Tourism, Athens, prior to present war.



As early, however, as 509 B.C., by the introduction of a new Constitution, all free inhabitants of Attica were admitted to citizenship. Wealth, which up to that time was looked down upon, became important in giving leisure to the citizen. Literature lost its former religious narrow character and Philosophy, by proclaiming that "man was the measure of all things" was trying to furnish a practical guide for life in the place of old religious superstitions. The new philosophy is no longer interested in

trying to explain the world of matter but rather attempts, by the application of reason, to explain the world of ideas and emotions, to give a rational account of man and the world around man, and to formulate the Laws which should govern his conduct both as an individual with a personality and as a member of a free State with certain duties and certain prerogatives. "Greece is the only creator", says Livingston, "of that spirit of free inquiry and scientific thought which in

religion, morals, politics, and natural science make the civilization of the West what it is." (1)

The Greeks exhibited an exquisite sense of the beautiful in Nature and Art and their basis for estimating the value of a thing was intellectual and artistic. For Greek art was not an expression merely of what the senses conceive as beautiful, but of the sensations and feelings which the beautiful creates within us controlled by the intellect. It is this kind of appreciation of beauty which enables the Greek to associate the beautiful with the good and the true, and by absorbing and assimilating it to carry it into his daily conduct, and see it reflected in every incident of life no matter how insignificant. It is this aesthetic love of the beautiful which enabled Phidias the sculptor to blow life into the cold Pentelesian marble by his marvellous creative power, and the tragic poets Aeschylus, Sophocles, and Euripides to write those immortal dramas, masterpieces of all time, in which morality and justice triumph.

The cultural achievements went hand in hand with the political conditions of

that period. The Constitution of Cleisthenes put the administration of the affairs of the city in the hands of the citizens of the demos. It was not a democracy as we know it to-day, but a democracy in which the affairs of the city were the immediate concern of each and every citizen, with the exception of the idlers who are useless to the State.

It was this democracy which humbled the proud and powerful Persian Empire which tried to subjugate Greece by brutal superior force. It was this democracy and Athens which Pericles glorified in his funeral oration delivered the first year of the Peloponnesian war in honour of the Athenians who fell in that war, and in which he gave an excellent verbal picture of the moral, political, and social state of the Athenians at that time, offering a model and an ideal toward which all our efforts should be directed.

"In short, I say the whole city is a school for Hellas, and in my opinion the same individual would among us prove himself qualified for the most various kinds of action. For it is the

(1) Livingston—*The Pageant of Greece*

Peasants of Megara, near Athens, in national costumes. Megara is situated on the most mountainous part of the isthmus that joins Peloponnesus with the mainland of Greece.



only country at the present time that, when brought to the test, proves greater than its fame; the only one that neither gives to the enemy who has attacked us any cause for indignation at being worsted by such opponents nor to him who is subject to us room for finding fault, as not being ruled by men who are worthy of the empire. . . It was for such a country, then, that these men, nobly resolving not to have it taken from them, fell in battle; and every one of the survivors may well be willing to suffer in its behalf."

Pericles calls Athens the "school of Greece" but Athens can become the school of the world, because, "the singular, the unique marvel of the Greek genius is its eternal youth". In these days of extreme nationalistic ideals, in the narrow confines of which the human soul suffocates and human values cease to exist, it is expedient that we turn our thoughts to the Greeks who were the first to break away from that narrow patriotism which branded every one who did not speak the same language as foreigner and looked down upon him with contempt and aloofness, and to

understand and recognize the sanctity of man as a human being. The Greek was certainly proud of his being a Greek. But he was proud not because he was born in Greece or of Hellenic stock but because of his superior civilization and ideals which he did not wish to keep to himself as a monopoly, but which, on the contrary, he was eager and willing to share with others. He wished to spread civilization and did not simply tolerate but accepted as Hellen any one who accepted his culture. It is this idea which inspired Isocrates to say in his eulogy of Athens:

"Our city has surpassed all the people of the world in eloquence and philosophy. Those who are disciples with us are masters elsewhere, and if the name "Greek" applies less to a special people than to a society of enlightened and refined men; if the title of Greek is given rather to those who participate in our education than to those who share our origin, it is owing above all to our institutions."

But although the Greeks enjoyed the intellectual supremacy over the world, they lacked political union. "The race of Hellenes is free and well governed" writes Aristotle, "and capable of ruling over all if only under one Government." This political union the ancient Greeks did not accomplish, on the contrary, they turned upon each other in destructive wars which exhausted their vitality. Philip, and later his son Alexander the Great, tried to bring about the political union of the Greeks and by such a union extend Hellenism in Asia and Africa. Alexander was more successful than his father and was able, within twelve years, and when but thirty-two years of age, to spread Hellenism from the Ister to the Danube. Hellenic Art and learning which began gradually to fade in Hellas continued to bloom and flourish in Asia Minor, Syria, and Egypt, and such cities as Alexandria, Pergamos, Ephesos, Antioch, became famous as seats of learning. These cities were not able to equal Athens in the production of masterpieces, but these masterpieces were preserved and explained there. The positive sciences, Astronomy, Mathematics, and Physics found here fertile soil to develop, and the Hellenic tongue, the most artistic and



A Greek maid in the rich costume of one of the islands of the Aegean Sea

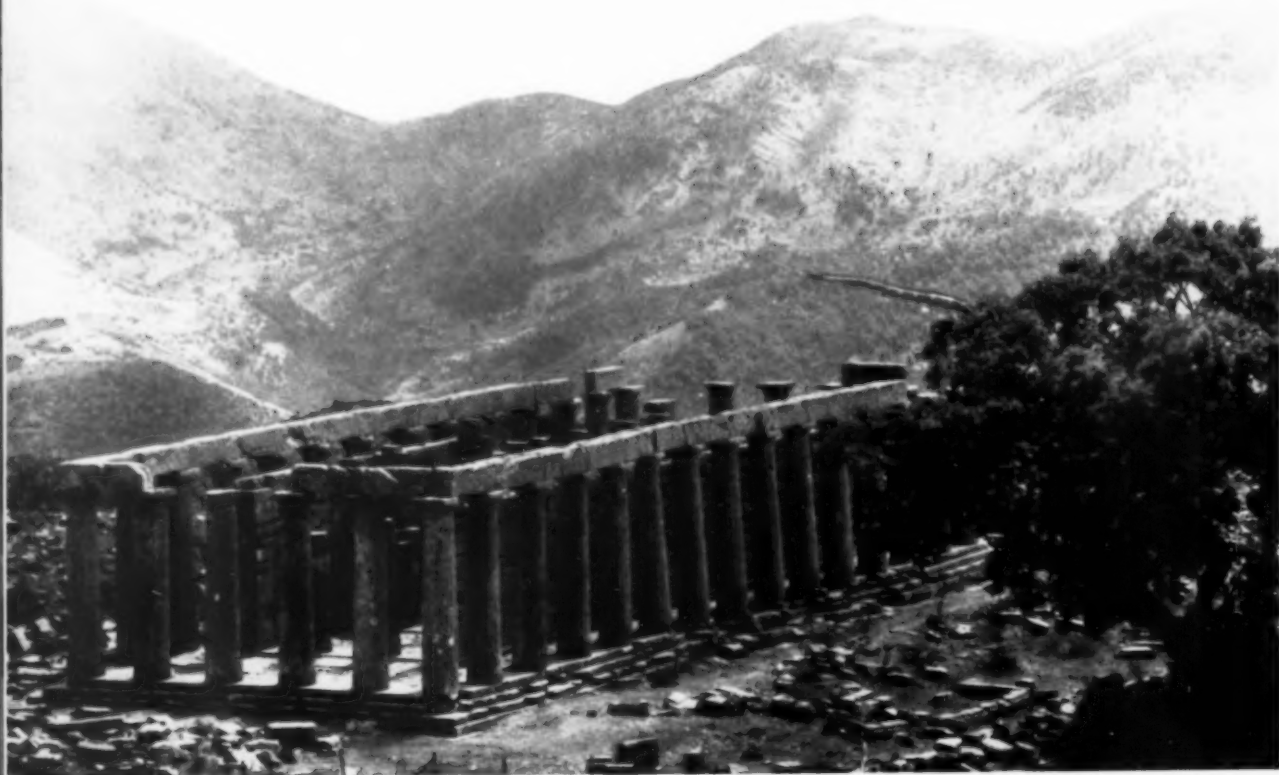
The port of Zante,
Island of Zante, in the
Ionian Sea opposite
Peloponnesus



The town of Poros on
the Island of Poros. An
exclusive summer resort
in the Aegean Sea

A partial view of
Athens from Constitu-
tion Square. To the
right is the Stadium in
Penteliesian marble
where the Olympic
games take place.





Temple of Apollo at Bassaé



The Treasure House of the
Athenians at Delphi



Ruins of old Corinth—the
Agora. In the middle back-
ground the remaining seven
pillars of the Temple of
Apollo. To the right is the
modern museum.



The Palace of Knossos,
Candia, Island of Crete



finished of all, became the wonderful medium for spreading the Gospel of God to Mankind.

And now what about the modern Greek? Calumnies upon calumnies have been heaped upon the modern Greek by superficial critics, the majority of whom boast of their exclusive classical learning who expected to find everywhere in Greece Socrates and Platos and Thucidides, but who failed to take into account other forces which were continuously at work in shaping the destiny of Greece. Unable or unwilling to read into the pages of history, they say of the contemporary Greeks that they are not true descendants of the classical Greeks, that the race has been drowned beneath the floods of Roman, Slavonic, Albanian and other invasions.

This astounding theory propounded firstly by a German scholar, Prof. Fallmerayer, in 1830, has ever since proven historically unsound and untrue, although, in former years, has been offered as an excuse for the Slavic and Bulgarian claims on Greek territory, in fact as an excuse for all those who wanted to limit Greece within small and insufficient boundaries, thus making Greece a geographical name. It is true that Greece has been overrun by many different races, Romans, Goths, Avars, Slavs, Persians, Bulgars, Arabs, Turks, Venetians, Genovese, but under all these conquerors the Greek people remained fundamentally Greek.

The Romans occupied Greece during the third and second centuries B.C., and the Greeks lost their political existence to the Romans, but their national life remained intact. The conquerors were unable to assimilate the conquered; on the contrary, were assimilated by them. "Graecia capta ferum victorem caepit" the Romans said. On the ruins of the Roman Empire gradually arose another, the Byzantine Empire, within which rulers and ruled spoke the Greek tongue.

(1) The Acropolis Hill, Athens

(2) Propylaea on the Acropolis, Athens. Gates leading to the Parthenon on the Acropolis

(3) The Parthenon on the Acropolis, a temple in honour of the Parthenos (virgin) Goddess Athena

(4) The Parthenon details, Acropolis, Athens

The Goths defeated the Romans and occupied Athens in 262 A.D. But the Greeks, regenerated by Christianity, drove the Goths out of Greece thus inflicting upon them their first defeat.

The Venetian adventurers left no other trace of their sojourn in Greece except some medieval castles and a few commercial terms still extant in the Greek language, and the only remnant of the Frankish conquerors is the Catholic religion in the Cyclades Islands.

The Slavonic immigrations into the Balkan Peninsula during the third century A.D. and in 746, and the Albanian immigrations during the thirteenth and fourteenth centuries did not alter the character of the people. These peoples were much inferior to the Greeks and "history affords us no example of a civilized nation destroyed or effaced by barbaric conquerors". The Greek race, superior as it was, was able to withstand the onslaughts of the barbaric invasions and to assimilate them. It is an indisputable fact of life born out by history that a higher civilization always subdues a lower one. The Greek race was therefore able to assimilate all the foreign elements and stamp them with her own seal as is evidenced by the Greek language which has not changed in spite of all these barbaric invasions from the classical Greek half as

(1) Covered street on the volcanic Island of Santorini, ancient Thera, one of the Cyclades, Aegean Sea

(2) Convent on the Island of Cephalonia in the Ionian Sea

(3) A little church on the Island of Aegina in the Saronian Gulf

(4) Convent of Osios Loukas on Mount Athos, Chalkidice Peninsula, near Salonica





Thessalonike (Salonica). The entrance to the Church of Agia Sophia (Holy Wisdom). The church, not shown, of rare historical value has been demolished by Italian bombs.



The Island of Tzia, Aegean Sea

much as has present-day English from that of Chaucer's "The Greeks have preserved their original tongue in greater purity, during an equal extent of years, than any nation with which we are acquainted, perhaps with the single exception of Arabians; and I believe the contemporary of William of Malmsbury or of Froissart would find more difficulty in conversing with his modern countrymen, than any Athenian of the purer ages with his." (2)

There is no such thing as an unmixed race, and the Greek race is no exception to the rule. But if the characteristic of a nationality or race is the spiritual qualities of the people such as ideas, ideals, folklores, customs, language, then the Greeks of to-day can lay a most legitimate claim upon the classical Greeks.

Albert Thumb in his treatise *The Modern Greek and his Ancestry* writes:

"... The Greeks have mixed with foreign elements like all nations which

have a history, but they possessed and possess such a wonderful intensive and extensive elasticity, that, in spite of the most contrary fate, they were able to absorb foreign culture and foreign races without having their nationality or national characteristics extinguished. Rather the fading race of antiquity gathered fresh vitality for itself by the mixture and was rejuvenated. The Greeks of to-day are descendants of the ancient Hellenes, not in the sense that every modern Greek could trace his origin back to an ancient Athenian or Spartan and so on, but they are descendants in this sense that in the modern people ancient blood flows largely and in some districts almost purely, and they are still more so in the higher sense that the modern race shows a natural development of ancient Greek national character, of course developed and transformed by the influence of all factors upon which depends

(2) Douglas F. S. N. — *On certain points of Resemblance between the Ancient and Modern Greek*



The Island of Mykonos, Cyclades, in the Aegean Sea



A fountain on Mount Pelion, Thessaly, Greece



Olympia. Entrance to the ancient Stadium. Here, Olympic games were originated and celebrated once every four years at the first full moon after the summer solstice.

the transformation of unmixed nations, if indeed there are unmixed nations with historical life."

The modern Greek, individualist as he is at heart, loves his independence and freedom—the Greek National Anthem is an ode to Freedom—and he is willing to go to great lengths, if by so doing he can retain independence of action and thought. He is temperate and sober, hard working and law abiding. He recognizes authority but not with servility. He is ambitious and proud. He resents tolerance. He is inquisitive, a philosopher, a poet without losing sight of the practical for which he is rightly called "The Englishman of the East". He loves his family and its honour is his constant concern. Domestic fidelity and maternal affection are predominant Greek characteristics.

The following characterization of the Athenians at the time of Thucydides by a Corinthian can well be repeated to-day about the modern Greek:

"... The Athenians are fond of innovation and quick in resolve and execution, bold above their strength, braving dangers even against their better knowledge, and, in misfortune, always full of hope... if

they fail in a trial, they put their hope in something else... Therefore, if anybody were to say that they are by nature such as to have no rest, nor let others rest, he would be saying the truth."

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A street on the Island of Syra, in the Aegean Sea







Photo by A. Haak

Here we have a poem in flight expressed in highlights and shadows — two Blues and four Lesser Snow Geese etched against a late April sky near Meadows, Manitoba. How determined the stride and how graceful the form! Are they now bound for the silent tundras of the Arctic to spend the summer? An exceptionally rare individual appears in this photograph — second from the extreme left — a pure white bird regarded as an albino Lesser Snow Goose. One seldom sees such a bird more than once in a lifetime.

WILD GOOSE RENDEZVOUS

by J. DEWEY SOPER

"GEESE by the millions." In these words a naturalist friend, many years ago, described the size of the wild goose migration through Manitoba. At that time I was fresh from the Northwest Territories where wild geese were old and familiar acquaintances, and to me, knowing nothing of their numbers and habits on the western prairies, this unexpected news came charged with a peculiarly exciting quality. The thought of countless northbound geese has a stimulating effect on the imagination and the emotions of most of us. My one

ambition, now, was to see, during the following spring, this fabulous movement of Arctic travellers.

The advance of civilization has wrought many changes, and our wild life, for example, has suffered widespread reduction as compared with primeval abundance. In view of this, the Manitoba naturalist's assertion would seem to many not a little bewildering, and, shall we say, rather fantastic. Can it be possible, they will ask, that complete responsibility and scientific accuracy lie behind these astronomic fig-

Top left:—A characteristic swarm of Blue and Lesser Snow Goose migrants south-west of Grosse Isle, Manitoba. The photograph, taken during the latter half of April, includes a small portion of a flock which was estimated to contain several hundred thousand individuals. The great majority are Blue Geese. Lesser Snows are notable for their pure white plumage, as the name would imply, and under most circumstances appear in startling relief.

Bottom left:—Lesser Snow and Blue Goose concentration on the Manitoba plains in the Meadows-Marquette sector north-west of Winnipeg. This view was secured from an aeroplane at a height of about 1,000 feet. A portion of the gathering in the foreground has taken to flight as the machine circles the field. Large numbers of Blues are present, but, at this height, are practically invisible against the neutral tones of the earth.

Photos by Captain Burt Gresham

ures? Do such faunal wonders still occur at the present time, despite the long generations of expanding settlement? I am happy, indeed, to assert that they occasionally do. In short, that we literally have "geese by the millions" when spring-time once again steals over the Manitoba lowlands. And upon this, I think, hangs a tale filled with interest.

The principals of our story are Blue and Lesser Snow Geese (to be scientifically inclined, *Chen caerulescens* and *Chen hyperborea*, respectively). It should be mentioned, also, that contributing to the vast numbers on the Manitoba plains are Canada, Hutchins's, and White-fronted Geese. The latter species play a minor role, however, as the great majority of the birds are Blues and Snows. These creatures winter along the Gulf of Mexico; the Blues, chiefly in Louisiana from the Mississippi Delta west to about Sabine Lake. In this territory there are, fortun-

ately, several bird sanctuaries of large extent. Naturally, such reservations have an important bearing upon the longevity and abundance of the geese under discussion.

Now, as with most birds, it is only during the winter months that our Blue and Snow Geese are strictly southerners. In the summer they go to the other extreme by nesting, and rearing their progeny on the remote and inclement tundras of the Arctic. Thus it is seen that they live a colourful and romantic existence, though, for the most, under conditions apparently far from comfortable. Each year they make two grand pilgrimages, one to get into the polar regions and the other to get out. The round trip amounts to about 6,000 miles.

So far as we know, Blue Geese nest only in Baffin and Southampton Islands. At all times and places they are in more or less intimate association with Lesser Snow

A typical landscape in the farming country westward of Winnipeg where several species of geese resort to feed and rest during the spring migration. In view is a dense flock of Blue and Lesser Snow Geese rising from the ground; the formation resembles a smoke plume from a passing railway engine. Vast numbers of the birds are to be seen still feeding over the field in the middle distance. A convenient straw stack, in such territory, offers a splendid point from which to observe the loitering multitudes.

Photo by Captain Burt Gresham





Photo by Captain Burt Gresham

Throughout the day Lesser Snow and Blue Geese gather in vast concourses to feed and rest on stubble fields, meadows, and sodden lowlands. Here the photographer has caught the upward rush of a departing flock with its deafening clamour of voices and wild beating of wings.

Geese whose breeding range, however, extends west to Alaska as well. The autumn migration from the eastern Arctic follows the east side of Hudson Bay to the extremity of James Bay, thence on a direct south south-west course to the wintering grounds in Louisiana. The spring flyway, on the other hand, lies along, or somewhat west of the Mississippi River bearing almost due north to the spring rendezvous in southern Manitoba. From here the route turns almost at right angles toward James Bay, after which the northward flight to the breeding grounds follows the same route as the autumn journey. A feature worthy of note is that the spring migration route is longer than that of the autumn by approximately 600 miles.

The phase of this long journey which most interests us here is the remarkable spring stop-over in Manitoba. Ordinarily, the northward migration of Blue and Snow Geese commences in Louisiana during the last few days of March. Many delays follow as the flocks move slowly northward

with the advance of spring. A few more energetic individuals frequently reach Manitoba early in April, but the big flocks, as a rule, do not arrive until the middle of the month, or even later. Persistent cold north winds often temporarily discourage any major movement into Canada, while a strong south wind at this delicately balanced period of restless waiting and indecision, will usher in a magnificent army of migrants, which, once seen, can never be forgotten. The late Allan Parkinson of Ninette, Manitoba, has captured the spirit of this movement in the following lines:

"Out of the soft cool stillness of an early April night,

Comes the wild, weird honking clamour of the wild geese in their flight.

And ever at the thought I feel a subtle inward thrill —

A word-defying something—you may call it what you will.



Photo by Captain Burt Gresham

Spring goose migration. Small, high-flying companies etched against the clouds as they drive persistently northward en route to far-distant nesting grounds in the Arctic regions.

It seems to touch deep hidden springs
within the heart of me;
The voice of Nature calling in her
accents wild and free,
And something in me answers—some
strange longing fills my breast
That ne'er can be by any empty words
of mine expressed.

There's the thrill of distance in it to a
stay-at-home like me
Their pinions span a continent from
South to Northern sea.
And whispered thoughts of far off places
I should like to know,
Intrigue my idle fancy, though I know
I may not go.

Perhaps it is because in them we hear the
voice of spring —
Herald of the age-old wonder of a world's
awakening.
And yet there's something more than
these that brings this strange delight—
The thrill of wild geese calling in the
quiet of the night."

When this feathered tide sweeps in,
it is as though some great torrent had been

unleashed. A deluge pours into Manitoba
—flock after flock, composed of myriads
of individuals. With what eagerness they
come, filling with an unconquerable urge
to push northward! Accompanying this
bold advance is a deafening clamour of wild
voices thrilling with buoyant determina-
tion and high adventure. The movement
continues day and night. Once momen-
tum is gained, it never slackens until
finally it comes to a temporary halt as the
last of the multitudes rest and feed on the
appointed meeting grounds. This great
gathering of the clans on the plains chiefly
west and north-west of Winnipeg con-
tinues for two or three weeks, or sometimes
a month, according to season; then another
stirring event takes place as the vast
flocks, in successive groups, leave for James
Bay and the Arctic. We believe that, just
prior to this departure, southern Manitoba
holds practically all the Blue Geese in
existence, in addition to incalculable num-
bers of Lesser Snow and other geese.

The magnitude of this Manitoba total
is difficult to conceive. Without exaggera-
tion it may be said that square miles of the



Photo by A. Haak

Flocks of this character are highly characteristic of the Manitoba lowlands, westward from Winnipeg, during late April and early May. In this instance the birds were disturbed on their feeding grounds by the photographer who had crawled "on all fours" through wet grass and shrubbery for half a mile to get within effective photographic range. Then with deafening cries they shot into the air before his position was quite ideal. Thousands of geese were in flight, only a small proportion of which were captured in this view. The majority of individuals are Blue Geese.

sodden lowlands, where the geese feed, are blanketed from time to time with these birds. The flocks vary greatly in size and are distributed principally in a roughly triangular area of about 800 square miles westward from Winnipeg. In many instances the geese are so densely packed that the ground beneath is completely screened from view. Some of the large masses have been seen to cover nearly a quarter of a section of land. Consider the arresting effect of the sight of such a gathering gleaming like a snow-field in the distance, with here and there the darker mottling of the intermingled Blue Geese. These dramatic concentrations truly number among Nature's most prodigal displays.

The sight of such a mass of bird life is an extraordinary experience, yet it lacks the extremely spectacular quality which is attached to the sight of the same flocks in flight. As may well be imagined, the result is profoundly impressive when the great throngs take to the air with a rumbling thunder of wings. The air seems to

fairly seethe with flying birds as they wheel and climb in a pandemonium of excited calls that can be heard for miles. It is a noise that can be easily recaptured in the imagination for months afterwards. Once well awing and the initial confusion over, the noisy battalions usually swing and merge into long lines like gleaming white and grey banners across the sky. Sometimes it seems that the entire firmament is filled with flying birds heading in different directions in a wide variety of formations. Under certain conditions of light, the Snow Geese flash and sparkle against the blue sky like countless thousands of fragments of white confetti.

Much activity takes place among the geese as they fly from one local feeding ground to another. Sometimes the flocks also visit neighbouring lakes. When several hundred thousands of geese take a notion to do the same thing at the same time, they present a wildly disordered appearance. On many occasions I have been asked to estimate the number in these larger aerial



Photo by A. Haak

Blue and Lesser Snow Geese flying low across a favourite feeding ground near Grant's Lake, Manitoba. Another large company occupies the field farther away, as yet unalarmed by the photographer's presence. The double line of Snow Buntings on the fence in the foreground marks the time as mid-April. These Arctic-nesting birds occur in large numbers on the Manitoba lowlands coincident with the huge gatherings of geese. All three species leave for the polar regions at about the same time.

swarms. This is difficult, as it is impossible to count the individual birds. It may be said, however, that flocks frequently have been seen so large that they darken the sky; masses of flying geese that filled an area from a quarter to half a mile wide, by a mile or more in length. At times the flocks are so long that two or three minutes are required for one of these fast-flying units to pass a given point. If you imagine several of these immense swarms in the air at one time, some little idea may be gained of the numbers involved.

One Winnipeg ornithologist witnessed a flock one April morning which had a front of nearly two miles, and reached back as far as the eye could see to the distant horizon. In writing about these great concourses on another occasion he said:

"How many birds would you say you saw in telling some one of a flight where the leading birds of the flock were dropping into the lake while the tail end of the flock was still out of sight? Then how many would be in a series of such flights,

say at about half-hour intervals, during the late afternoon to long after darkness had fallen?"

There is in my possession a photograph taken west of Winnipeg of a distant mobilization of geese rising in a compact body from the ground. The entire flock was estimated to contain at least half a million geese, the great majority of which were Blues. Owing to limited lens angle, it was computed that the photograph contained but a sixth of the total assemblage, yet a broad band above the horizon shows an impenetrable mass of flying birds reminiscent of a smoke cloud from a forest fire. Many Blue and Lesser Snow Goose gatherings of comparable dimensions have been witnessed by local observers. Owing to the length of the larger flocks reaching through a very wide angle, no entirely adequate still pictures, I believe, have ever been taken.

A prominent Manitoba naturalist, in a single morning, saw, west of Winnipeg, nine or ten huge flocks which collectively

must have exceeded a million birds. On another occasion when a low-flying aeroplane had disturbed the flocks and mixed them together, he drove for nine miles west along the Winnipeg-Portage-la-Prairie highway, and north for five miles, when the sky carried a continuous mosaic of geese in wedge and line formation. The birds on every hand created a bewildering scene. Under such circumstances it is, of course, quite impossible to satisfactorily estimate the number of individuals present. Our observer on this occasion, however, was convinced that several million geese were resorting to this one sector alone.

Another ornithologist not long ago leisurely studied from ambush an immense concentration of Blue and Snow Geese in the neighbourhood of Meadows, Manitoba. This ground flock was roughly one and a half miles long and half a mile wide. Taking into due consideration its average compactness, it was thought, as a conservative estimate, to contain nearly two million birds. On the same date and in the same general territory, other huge flocks were observed both from the air and the ground. These teeming multitudes, needless to say, are hopelessly beyond count, or reliable estimate.

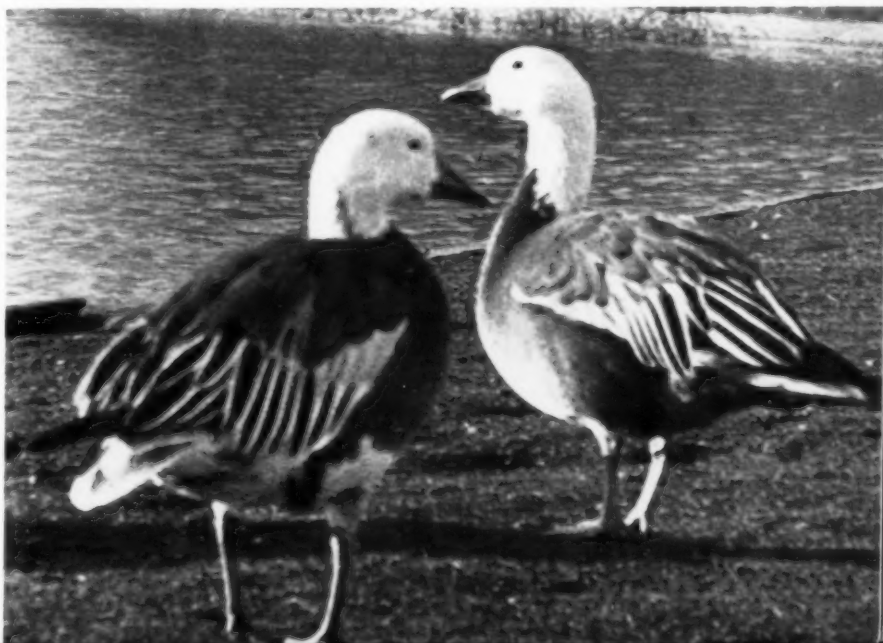
Several factors are responsible for the notable abundance of these handsome migrants. First, protection is accorded to all migratory birds by virtue of international legislation, which in Canada is embodied in the Migratory Birds Convention Act. Second, the existence of many large bird sanctuaries in Canada and the United States, frequented by Snow and Blue Geese, which afford complete safety at all times. Third, owing to the peculiar character of the migration routes in rela-

tion to the autumn open season, relatively few birds are secured by hunters; the largest concentrations outside of sanctuaries, but still within settled areas, occur during the spring migration when shooting is illegal. Fourth, the fortunate circumstance that the geese nest on the remote tundras of the Arctic where they are practically free from man's molestation, including the Eskimos; this is no small benefit, as with some species (now greatly reduced in numbers), large areas of their primitive nesting grounds have been completely wiped out by the steady advance of settlement. It is enlightening to note, on the contrary, that Blue and Lesser Snow Geese, with Arctic affiliations, are not only holding their own, but are believed to be increasing in numbers.

The Winnipeg district is evidently a focal point for these wild geese, whose flyways converge upon the middle of the continent during the migration from Louisiana to the Arctic. We know of no other territory aside from the James Bay locality, and the breeding sectors, where anything like comparable numbers muster in a relatively restricted area. There are, in fact, several good reasons for believing that the southern Manitoba plains outrival them all in concentrated density, with a total goose population, for two or three weeks, variously estimated from ten to fifty million individuals. This magnificent spectacle may truly be referred to as an amazing and incomparable natural phenomenon. Without question, it constitutes one of the greatest mobilizations of large-sized birds to be seen anywhere in the world. We do, indeed, unreservedly agree with our Manitoba naturalist in his declaration of "geese by the millions".

A pair of Blue Geese. These distinctive game birds winter along the gulf coast of Louisiana and fly northward more than 2,500 miles to nest on the bleak swamp-tundras of the eastern Canadian Arctic.

Photo by
Captain Burt Gresham







Pluckers on their way to work. Their eight-hour day begins at seven.

THE TEA INDUSTRY OF CEYLON

by ALAN MAURICE IRWIN

TEA planting in Ceylon is an earnest business that finds its nearest parallel in the life of the average Canadian farmer. In fact it goes considerably farther than our familiar parallel, for tea, when it leaves the confines of the plantation upon which it is grown, is ready, except for blending and packaging, to be infused and consumed.

Ceylon's great tea industry, to-day by far the most important item in the colony's revenues, celebrated its jubilee in 1937. It owes its start to the coffee blight that destroyed coffee plantations and ruined planters fifty years ago.

Prior to 1887 the acreage devoted to tea was very small. The plantations were purely experimental. James Taylor, man-

ager of Loolecondera estate, cleared twenty acres in 1867. In the next eight years the total acreage grew to the small total of 1,080 acres. But by 1897, eighteen years after the abandonment of coffee cultivation following the blight that stamped out 275,000 acres of plantations, tea was being grown on 305,000 acres. Much of this land had been under cultivation for coffee. By 1915 the tea acreage had grown to 402,000, and another twenty years brought the total up to 480,000 acres — 192,000 acres more than had ever been devoted to coffee.

Ceylon's earliest export to London was a shipment of twenty-three pounds in 1872. This brought a price of ninety-two cents a pound. Exports in 1936 totalled

Top left:—Superintendent's bungalow

Bottom left:—Road and rail serve this factory.

217,000,000 pounds. In between those two figures lies a wealth of history. A history of struggle upwards from the near-bankruptcy that faced many estates and grinding poverty that overtook many planters. It was the history of farmers as we know farming in Canada — long years of arduous clearing, of shortage of labour, of production and distribution troubles — long years of crop-study. In Ceylon the pioneer was faced with a condition that did not bother his brother on the wide prairies. True, he had to fell timber, stump the clearings and burn off slash much as in Canada.

The best qualities of tea are those grown at high altitudes, and it was to the higher levels that the pioneers went in search of sites for their plantations. Kandy, Peradeniya, Hatton, Nuwara Eliya, all easily located on a map of Ceylon, lie within the tea area, and Badulla, farthest point from Colombo, is only 180 miles from Colombo. The close proximity of the tea districts to the shipping point is an economic factor that has played a considerable part in the growth of Ceylon's tea industry.

As must be the case when new gardens are opened upon hill-sides, often ranging from 3,000 to 6,000 feet, much terracing is necessary in the preparation of a tea plantation, and irrigation and drainage are of paramount importance where soil erosion

is a danger. An integral part of any plantation is the road system. Careful planning of this feature is essential for several reasons. Each plantation, with its own factory, bungalow and coolie lines, is a self-contained unit, its manager a combination of mayor, magistrate and town engineer.

Generally thought of as a shrub, the tea tree is a branch of the camellia family that will reach a height of thirty to thirty-five feet if left unattended. In cultivation, it is allowed to reach a height of from three and a half to four feet. The plants are set out in straight parallel rows across the hill-sides, three, or three and a half feet being allowed between the rows.

Cultivation is scientific and systematic. The actual work is done by coolies, most of whom are Tamils from southern India. There are 600,000 Tamils in Ceylon, and they are better workers than the Sinhalese at the ordinary tasks of the plantations, though the latter are in demand at the heavier work of clearing land. Under the supervision of the manager and his assistants, *kanganies*, or native foremen, direct the workers in the normal tasks of planting, manuring — this with carefully prepared artificial manures, pruning and plucking in the field and in the various branches of factory production.

Plucking, according to the elevation of the plantations, takes place from twenty-five to fifty times a year. Close to being one of the most important processes in the production of tea, plucking is always carried out under careful supervision. Women and the older children, expert after years of practice, do the actual plucking, stripping the bud at the tip of each new shoot and the two leaves below it from the bush and tossing them into large baskets that hang on their backs. A good day's work for an expert plucker is eighty pounds of fresh leaf — equivalent to twenty pounds of tea. A good year's work for tea plants is from 2,000 to 4,000 pounds of fresh leaf per acre.

Various methods are employed to transport the crop to the factory. Depending on the size of the plantation, this transport may be done by the pluckers themselves, their baskets borne upon their backs supported by a tump-line across the forehead, when the factory is close to the field. On larger estates bullock carts,

An assistant shows new pluckers what to pick.



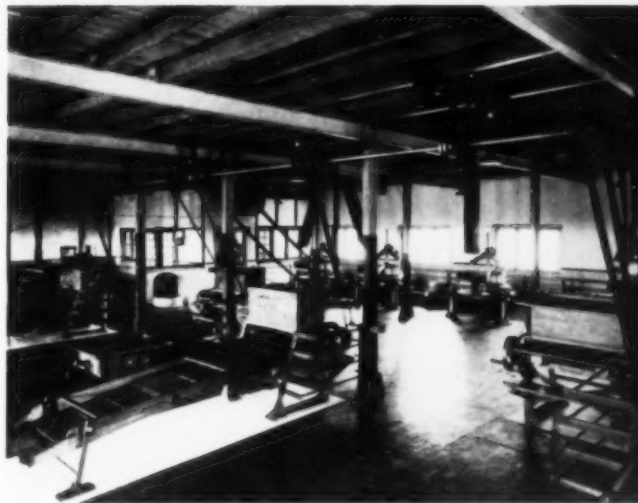
motor trucks, narrow gauge tramways or wire ropeways are necessary.

Tea loses seventy-five per cent of its weight in manufacture, a fact easily understood when the manufacturing processes are examined. Process number one is known as withering. This process is carried out by natural, or artificial means in unfavourable weather. The latter laid the foundation of "air-conditioning" as we know it to-day. Upper levels of a modern tea factory are constructed so that a flow of air may pass over the newly plucked leaf as it is laid out thinly on what are known as tats — canvas shelves — racked one above the other. The windows may be shut tight when the weather is too humid, and hot air is passed over the leaves so that the wither may be completed in from eighteen to twenty-four hours.

Withering is followed by rolling. This process, once carried out by hand, is to-day done by machinery. The leaves pass through the rolling machines from three to eight times according to the texture of the leaf and market requirements. The function of the rolling machine is two-fold. It is designed to crush the leaves sufficiently to loosen the essential oils in the leaves as well as to prepare the herb for packing.

Fermentation commences during the rolling process and is continued in the next step after the leaves have been sifted automatically upon leaving the rollers. Drying of the leaf is avoided as far as possible during fermentation by the use of humidifying devices. One means of humidification is the use of damp cloths which are hung around the fermentation tables and kept moist by continually spraying water. Fermentation may be completed in from two and a half to four hours according to the leaf. As soon as it is complete the process is arrested by the transfer of the leaf to the firing room where hot air is passed over the tea, and its moisture content is reduced from an average of fifty per cent to approximately four per cent and the product is to all intents and purposes in the condition in which it reaches the consumer.

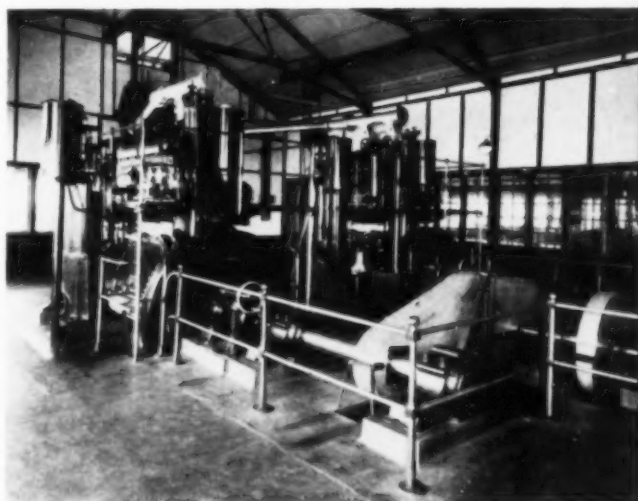
Sorting and sifting after the firing is complete are carried out by machine and careful inspection. Grading into the various sizes is done by the sifting machines, the grade being decided by a series of meshes through which the rolled leaves pass.



The rolling room. Rolling machines in the background loosen the juices. Roll-breakers, in the foreground, prepare the leaves for fermentation.



The sifting room of a modern tea factory. Sieves of various meshes separate leaves of different grades. One of the planters' worries — the factory power plant





Elephants are used for heavy work on the plantations.

These grades, in their order, are: Broken Orange Pekoe, fifty per cent; Broken Pekoe, twenty per cent; Orange Pekoe, ten per cent; Pekoe Souchong, Dust and Fannings, twenty per cent.

The final operation at the factory is that of packing which is done as soon as possible to minimize the absorption of moisture by the leaf. In order to get the maximum of tea into each chest without using compression, an ingenious device is used in the packing room. This consists of a small platform to which the metal-lined tea chest is fastened securely. As loading commences the platform is oscillated rapidly thus shaking down the tea without pressure.

As soon as sufficient tea is on hand, the manufactured product is shipped from the plantation to Colombo, where it may be sold locally or shipped to England for sale by auction in the Tea Auction Rooms.

Now that the tea has been manufactured, let us take another look at the men behind the guns. The short description of the various processes of growth and manufacture should convey an idea of the mechanical qualifications necessary. Would-be planters are recruited from three sources: public schools, universities and the Army. They start as junior assistants in charge of two or three hundred acres of tea. Opening salary is about \$1,200 a year, free housing, a house servant, gardener, free firewood and free tea. This salary rises to a possible \$4,500 per annum. By the time this figure is reached the recruit has become a superintendent or manager, depending upon the size of the estate for which he works.

Plantations are owned by large estates controlling several plantations. Many of these estates are very old, practically all are limited liability companies controlled from London.

Tea marketing is by auction after sampling. The auctions may be in Colombo or London. Approximately half of Ceylon's crop is sold in Colombo. The Colombo auction rooms, like those of London, operate the year round since tea production in Ceylon knows no off season. Buyers taste and sample each lot of tea, and grade and quality are, of course, the major factors controlling price.

To Colombo, as to the Island of Ceylon

A modern tea factory high in the hills



This pile of tea has been through every manufacturing process and is now ready to be packed.



Tea flows evenly from the hopper while the chest is oscillated by the machine-controlled platform.

Metal-lined chests are banded with steel tape for protection in transit.



generally, tea is an important part of economic life. Warehouses and docks give employment to thousands, the harbour is thronged with ships that carry the fragrant herb all over the world and Colombo's social life gains from the steady passage of planters and buyers going to or returning from leave. To the rest of the world Ceylon's tea industry means the difference between "a cup of tea" and a "cup of good tea".

Ceylon's teas, notably those from the higher altitudes, are noted for fine, full flavours, and are much in demand for blend-

ing. The addition in its proper proportion of a flavouring tea to a lower grade of good liquoring tea imparts the fine flavour to the whole.

To-day in line with the progressive methods that characterize the tea industry, Ceylon is concentrating upon the production of finer teas to meet the ever-increasing demand of housewives for tea of the highest quality, and it seems apparent that the great industry that was born of misfortune is not only an integral part of the future of Ceylon but an important thread in the fabric of the Empire.

Tasting and sampling are important functions of the tea buyers who make Colombo their headquarters.



Top right:—Sinhalese teamsters. Their steeds, not record-breakers, are steady and reliable.

Bottom right:—A gravity system delivers tea chests to the lighter from which they will be loaded aboard ship at Colombo.





Champlain-

Champlain, founder and first Governor of Quebec

MEMOIRS OF A SEVENTEENTH CENTURY SPY

by J. S. PATRICK

CANADIAN history is not dry or drab, not a monotonous compilation of dates; it is something alive and vivid, more thrilling than fiction, for the novelist must keep within the limits of credulity. And, through the generosity of Lady Oakes, wife of Sir Harry, still another colourful episode in Canada's romantic story has been made accessible to the Canadian people. Lady Oakes recently presented to Canada newly discovered documents from the hand of the famous Baron de Lahontan; this gift will not only be appreciated by historians for the valuable data contained in the manuscripts, but by the general public for obvious reasons.

At no other time could the appearance of these Lahontan memoirs have drawn more attention — nothing could be more propitious! In these days when talk of spies and fifth columnists runs high, the minds of people are receptive to anything in the same vein. Coupled with this is the fact that Canadian east coast defences are being strengthened to cope with a possible attempt at invasion, and that air and naval bases in Newfoundland have been leased to the United States by Britain. For here we have a veritable Quisling of the seventeenth century! Here we have a former officer of the French Marines supplying the British Government with explicit information as regards the fortifications and man power of Quebec and Placentia (capital of the French-held territory in Newfoundland), and showing how these colonies might easily be captured. But it should be noted that Lahontan was a free lance: he wrote these memoirs without the authority, or even knowledge, of the British. Consequently, he was not a regular spy inspired by loyalty for his own country, but rather a self-appointed fifth columnist aiding the enemy for personal gain. For this reason too, certain statements must be taken with "a grain of salt".

* * *

But first it will be necessary to give a brief biography of Lahontan so that the reader may understand the man's personality, and consequently be able to judge the value of his observations.

At the age of seventeen (1681) he came to Canada as a midshipman in the Marine troops. This was during the regime of the incompetent La Barre, when the Iroquois were giving the French plenty of trouble. The brilliant young officer made rapid promotion, finally being named second-in-command at Placentia (1693), under Governor Brouillon. But he refused to submit to the autocratic rule of Brouillon, who, for his part, saw that Lahontan was undermining his authority over the inhabitants. The result was that Brouillon drew up an indictment of incompetence against his youthful deputy and sent it to the Minister in France. With this threat hanging over his head, Lahontan deserted his post and

Author's Note: "Baron de Lahontan, Explorer" by Stephen Leacock was published in the *Canadian Geographical Journal* for May, 1932. In this article the Professor's object was to vindicate Lahontan, who had been branded an impostor by historians for more than 200 years, and he presented splendid arguments to justify his theme. These new documents, however, certainly prove the perfidy of the audacious Baron and challenge Leacock's contention that he should rank with LaSalle, Marquette and contemporary explorers.

fled to Portugal and from there made his way to Holland.

Once in Europe, he made several vain attempts to gain favour at Versailles, begging to be taken into the King's service again. It was probably in 1696, that pressed for lack of funds, he drew up his two memoirs on Quebec and Placentia betraying his own country. Curiously enough, he offered to serve as a French spy in Spain two years later for the modest sum of four hundred crowns a year, but France turned a deaf ear.

He later turned to writing the colourful books on his experiences in Canada which made him famous. These works became the best sellers of the moment, and almost overnight he found himself a celebrated author. It is generally believed that the dashing, adventurous and rascally, but probably likeable Baron de Lahontan died, still in exile, in 1715.

* * *

Instructive Summary of the Affairs of Canada

The first memoir, as its title suggests, is mostly descriptive, evidently to convince Britain of the value of the colony and to stimulate the desire for conquest — propaganda, so to speak.

The geography of the country is explained, particular attention being given to the navigation of the St. Lawrence. The climatic conditions are defined, and the fertility of the land extolled. The possibilities for manufacturing and shipbuilding are pointed out, and the opening of copper and iron mines at Tadoussac recommended. Indeed, here Lahontan made the prediction that "it would make the finest empire and the greatest state in the world were it possible to unite New France and New England, and the advantages to be derived therefrom would not be small". Next the fur trade is dealt with, showing the methods used to acquire the skins from the Indians, the transporting of them (extremely hazardous due to treacherous waters and equally treacherous Iroquois), and their disposal. It is shown how lucrative the trade is, and here an accusation is made against the Jesuit missionaries "who care much less for the salvation of all these poor barbarians than for increasing the revenues of their houses by the prodigious number of canoes of beaver which they send to Quebec under the name of Tiber and Gautier". The governors general and intendants are said to "think

only of their own interests and care very little for that of the public".

Lahontan reviews at length the war between the Iroquois and the French. La Barre and Denonville are scored for their incompetence and cowardice, and blamed for arousing the scorn and resentment of the friendly Indians. Frontenac is given credit for reorganizing resistance against the Iroquois. It is related how Phipps, when he sailed up before Quebec in October, 1690, missed a golden opportunity of capturing Canada. At that time the garrison contained only one hundred men, with neither guns nor ammunition. But by the time Phipps attacked, three days later, Frontenac had rushed in two or three thousand men, and Quebec repelled the English invader. Lahontan finally enumerates the damage caused to the French colony by the Iroquois war: The friendly Indians are hampered in their trapping and slaughtered at portages while returning with a winter's catch. Settlements are pillaged and cattle stolen. The expense of maintaining a large number of troops is enormous, but still "the peasant cannot leave his house without the danger of being killed in his own field". He hastens to explain, however, that it would be different if the English were to take Canada; that all the Indians "secretly hate the French for countless reasons" and heartily wish the English to conquer; finally repeating that, if all the colonies were under one master, it would be possible to form one of the finest and most flourishing empires in the world.

* * *

Outline of a Project to Capture Quebec and Placentia

Under this title, the second memoir gets down to "brass tacks". Having shown how desirable it is to capture Canada, Lahontan now proceeds to show how it may be done — and he throws in Placentia for good measure. This is the most important document, for it gives a very clear picture of the strategic position and military defences of the colonies.

Lahontan states at the outset that to take Quebec is to conquer New France, not only because the other settlements were poorly fortified but that all communication and aid would be cut off. To capture Quebec a simultaneous attack at several points would be necessary, and this is an outline of the procedure recommended: A squadron of gunboats "provided with



Frontenac, Governor of New France in Lahontan's time

good troops" would be set afloat in England, followed by transport ships carrying men and munitions, to these some might be added from New England. They would meet at a given rendezvous, probably Isle Percée or Bonaventure; this being effected, they would proceed together to Quebec. (As an east or north-east wind would be necessary, and as those winds prevail in spring and autumn, it would be safer to use one of these seasons.) The flotilla would halt between Beauport and the town, where half or three-quarters of the forces would be disembarked. These troops would march straight toward the Recollets' house to the desired point of attack. With pieces of cannon brought up, a breach would soon be made. In the meantime, that party of troops which remained with the ships would make a descent on the lower part of the town or other nearby places. In view of the flimsy fortifications and the extensive circumference of the town walls, "which would require ten thousand men to defend them", this enterprise could not fail. The importance of a favourable wind is again mentioned, for, in such case, the fleet would at least reach Tadoussac without being discovered; thus the French would have no time to bring reinforcements from Montreal and Three Rivers.

Here Lahontan makes reference to Major-General Winthrop's projected expe-

dition of August, 1690, and shows the difficulties of such a project. For even if he proceeded by Lake Champlain with a large force and overpowered Montreal and Three Rivers, it would be impossible to maintain the lines of communication or to bring along the pieces of cannon required to force Quebec. (This was, of course, to prove the merit of his own plan.)

However, once Quebec was in English hands, it must be held; and here is how that was to be done. A strong fort would be built at Isle-aux-Coudres, fitted with good pieces of ordnance and manned by a substantial garrison. Since ships bound for Quebec must pass within a pistol-shot of this island, the passage would be closed to the French. To resist possible attack by a French fleet, warships could be brought from New England, or even England. The alacrity with which a British victory would be welcomed would also be a factor ensuring success. For Lahontan states: "There are not two hundred families in Canada who would not wish with all their hearts to be under English rule . . ." The reasons given are because of the mildness of English government; that import, export and other duties on merchandise and furs would no longer be exorbitant; and that cloth, hides, gunpowder, iron and other metals would be much cheaper. Besides, the trade between New York and New France would be profitable to the inhabitants, and the English would operate successfully the salmon and cod fisheries on the St. Lawrence which the French had always neglected.

Lahontan now passes to the damage the British could inflict on the sea trade of the French. Seeing that Boston is only two hundred leagues from the mouth of the St. Lawrence, and France eleven hundred from it, English privateers could cruise around all summer taking advantage of good harbours, pouncing on French merchant ships as they came along. Even if these ships set out from France in groups convoyed by warships, it would be impossible to keep them together over such a long voyage, and they would still be easy prey for the English privateers.

A description of Quebec is now given explaining its geographical position, fortifications, buildings, trade and population, as well as the conditions of navigation in the St. Lawrence. Lahontan deprecates the Sovereign Council, which heard appeals from all other courts in Canada,

and adjudicated sovereignly (or was supposed to) in all matters of State. The Governor, Intendant, and the Bishop were blamed for quarrelling over precedence, and the Jesuits were again criticized—this time for alleged political meddling.

The enumeration of the militia in the settlements of New France taken by Intendant Champigny in 1687 is given, and also a rough enumeration of the Indians living among the French. (These figures can be compared with the official census of New France taken in 1692, which placed the population of Quebec at 1,570 and 11,175 for the whole of New France.) Lahontan doubts that there are 2,000 men in the country capable of bearing arms.

Alternative plans were given on how to capture Placentia. The first was a surprise attack by land, preferably in the spring before the arrival of French ships. The expedition, comprising a corps of four hundred men, would leave Ferryland or St. John's (Newfoundland) by shallop and disembark half a league from the extremity of Placentia Bay. From that point the post could be reached by a two-day march through the woods. Even in broad daylight, three hundred men would be sufficient to overpower the redoubt (which commanded the fort from the top of the mountain), the other hundred preventing aid by firing down on the fort. The redoubt captured, the fort would be compelled to surrender, for "the guns of the redoubt would turn it upside down in ten volleys"—the houses being flimsily built on stakes in sand and gravel. It would be advisable, however, to bring along powder and cannon balls because there might be none stored at the redoubt; this precaution being taken to guard against just such an enterprise. To provide an escape for the troops if the attack failed, three or four fishing ships should be lying in wait in one of the little harbours close to Placentia.

The other method was to "arm a squadron of ships with two bomb-ketches and while they are bombarding them, to make another attack by land on the redoubt." Because of the unfavourable nature of the ground and the poor construction of the buildings, a dozen bombs would knock everything down and the French would have to surrender, even should the attack on the redoubt fail.

The way to hold Placentia was to build a square fort on the mountain in place of the small redoubt. The fort should be sur-

rounded by substantial walls, with well-vaulted powder magazines, and a battery should be mounted on Pointe Verte to prevent hostile ships from entering the roadstead. Lahontan also recommended settling a hundred families there and maintaining a strong garrison. The French governors, he said, sent elaborate plans to the Court, but built card-fortresses and put three-quarters of the money in their pockets.

A description of Placentia follows next. The harbours of Placentia Bay are described, showing their capacity for the shelter of ships and fishing boats. That of Placentia was, of course, the most commodious and provided the best shelter, being surrounded by mountains. Indeed, "one could easily draw up eight hundred ships which the smallest cable would be sufficient to hold in any storm which could occur." Although this harbour could be entered at high or low tide, a slack or rising tide was most favourable.

The fort of Placentia was nearly three hundred paces in circumference. Its fortifications were both bad and irregular, consisting of four curtains of stones piled up between stakes, and two small bastions of the same construction. There were twelve cannons of eighteen and twenty-four pounds facing the roadstead, and fourteen guarding the entrance to the little strait. The number of inhabitants was placed at fifty families; they were supported by the cod fishery, which was very prolific. The soil produced a quantity of vegetables, and the hunting of small game was good.

Placentia was important to the French because it was the only port in America where dried cod could be obtained in time of war, the other ports, namely, St. Pierre and Isle Percée being open harbours without fortification. Besides, being on the direct route, ships coming from France could run into that harbour in case of need of supplies or repairs.

Placentia would be of importance to the English for the following reasons: first, the French would have no more dried cod unless they bought it from them through neutral nations. Secondly, they could supply all of Spain, Portugal and Italy with cod at considerable profit. Thirdly, it would be a haven for English privateers, and thus bar the entrance of the Gulf of St. Lawrence to French ships. Finally, it would add to the general trade of the English, enabling their merchants to

enrich themselves at the expense of the French.

* * *

*Autograph Letter of Lahontan**

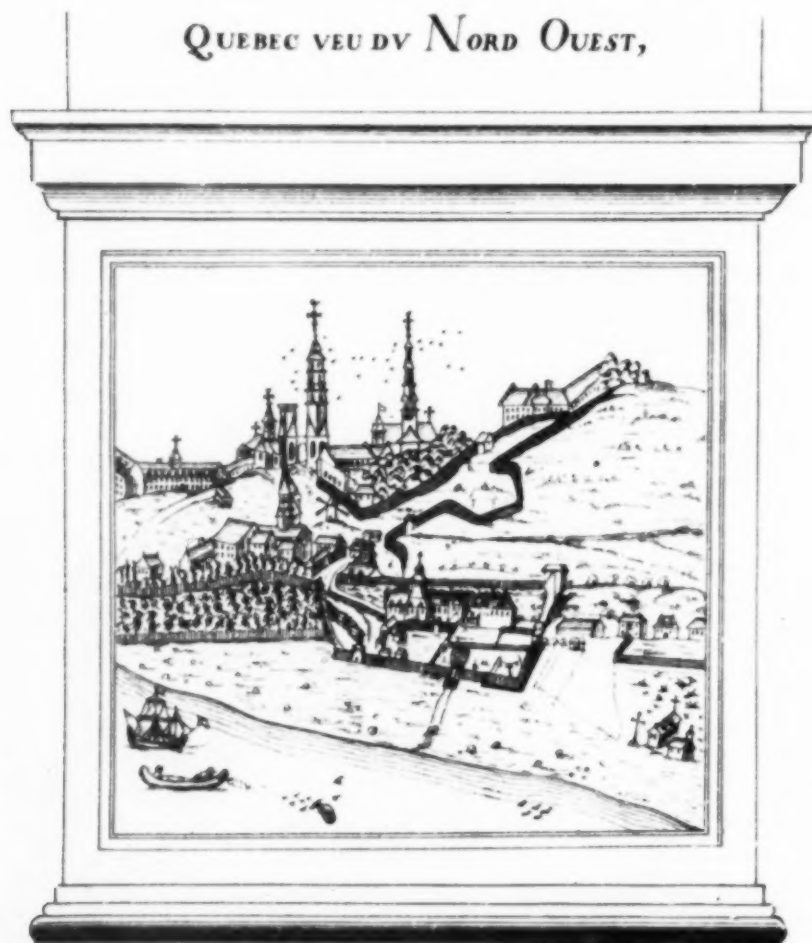
This letter, dated June 19, 1694, was sent from Hamburg to the French authorities. In it Lahontan claims he met two surviving members of LaSalle's ill-fated expedition to Louisiana. They told him that after the death of LaSalle they had lived with the Indians for five years, often accompanying them in their raids on Spanish villages. Lahontan offers to supply information concerning the LaSalle adventure and the richness of the country the latter had discovered.

However, this was only a ruse of Lahontan's to re-establish himself in the good graces of the Court of France, for, on investigation, it was proved to be a complete fabrication. The letter was not even answered.

* * *

These documents have been published by the Department of Public Archives for the use of universities, libraries, and historical research students. The publication is completely bilingual, and edited with an introduction by Dr. Gustave Lanctot, Dominion Archivist. The originals are on display at the Public Archives, Ottawa.

*Although not of the Oakes Collection, this letter provides an interesting sidelight.



Manuscript map of Quebec as seen from the north-west, 1699

EDITOR'S NOTE-BOOK

Griffith Taylor, D.Sc., B.E. (Mining), B.A. (Research, Cambridge), needs no introduction to our readers. In this issue he makes a further contribution in "Mediterranean Pilgrimage" to his European series published in the Journal since the outbreak of war. Professor of Geography at the University of Toronto, Dr. Taylor was recently elected President of American Geographers, an honour conferred for the first time on a geographer not residing in the United States.

George Demetrios Vlassis, M.A., author of several books of prose and poetry, was born in Corinth, Greece. A graduate of the Gymnasium of Corinth, 1912, he attended the law school of the Capolistran University, Athens, Greece, 1913-14; later coming to North America, he continued his studies, graduating from the University of Manitoba, B.A., 1929, and the University of Wisconsin, M.A., 1932. Secretary to the Greek Consulate General, Montreal, teacher of classical Greek at Wesley College, and since 1938 Deputy Vice-Consul of Greece, Toronto, further add to a background of scholarship and authority on the subject on which he writes. Mr. Vlassis served with the Greek Army, 1921-22.

J. Dewey Soper, writer of "Wild Goose Rendezvous", is a native of Guelph, Ontario. After studying at the University of Alberta, he was appointed Naturalist to the Canadian Arctic Expedition of 1923 for the National Museum of Canada. Subsequently he spent several years in the Eastern Canadian Arctic specializing in zoological research and geographical exploration for the Dominion Government. Since 1934, Mr. Soper has been Chief Federal Migratory Bird Officer for the Prairie Provinces.

Alan Maurice Irwin, born in London, England, emigrated to Canada in 1913,

later served with the C.E.F., and was wounded in France. For some years, the writer was engaged with Canadian Manufacturers Association and later as Press representative of the Canadian Pacific Steamships. In his world travels he followed up his early association with a tea firm in London, England, studying the tea industry in Ceylon, India, Java, China and Japan. He is the author of "... and ships, and sealing wax".

J. S. Patrick, born in Kilmarnock, Scotland, came to Canada at an early age, receiving his primary and secondary education in Ottawa, and specializing in History, English and French. At present, the writer is English Editor and translator at the Public Archives, Ottawa.

EDITORIAL

The Canadian cheque book has ever been responsive to appeals for undertakings which stirred the heart. Canadians one and all are now being asked to share in adding new strands to the Life Line of Britain in the form of needed dollars to make Democracy secure — no matter how turbulent the tides of war.

Inspiration comes in the constant flow of heroic deeds of the common man in Britain, in Greece, in Africa, on the high seas and in the air — wherever Britishers and their Allies are fighting the battles of Freedom. If more stimulation were needed, it has been recently supplied in the magnificent response of the people of the United States voiced by President Franklin D. Roosevelt. This blood transfusion is of the right type to revitalize all Britishers and their Allies. It is the right type to release Canadian dollars for Canada's War Effort. Canadians, as in the past, will insist on contributing their share — and with margin to spare.

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As one of its major activities in carrying out its purpose, the Society publishes a monthly magazine, the Canadian Geographical Journal, which is devoted to every phase of geography—historical, physical and economic—first of Canada, then of the British Empire and of the other parts of the world in which Canada has special interest. It is the intention to publish articles in this magazine that will be popular in character, easily read, well illustrated and educational to the young, as well as informative to the adult.

The Canadian Geographical Journal will be sent to each member of the Society in good standing. Membership in the Society is open to any one interested in geographical matters. The annual fee for membership is three dollars in Canada.

The Society has no political or other sectional associations, and is responsible only to its members. All money received is used in producing the Canadian Geographical Journal and in carrying on such other activities for the advancement of geographical knowledge as funds of the Society may permit.